105th Congress, 1st Session – – – – – – – – – – – – House Document 105–162

NAVIGATION IMPROVEMENTS AT MIAMI HARBOR, FLORIDA

COMMUNICATION

FROM

THE ACTING ASSISTANT SECRETARY (CIVIL WORKS), THE DEPARTMENT OF THE ARMY

TRANSMITTING

A REPORT ON THE AUTHORIZED NAVIGATION IMPROVEMENTS AT MIAMI HARBOR, FLORIDA, PURSUANT TO PUB. L. 104–303, SEC. 101(b)(9)

OCTOBER 31, 1997.—Referred to the Committee on Transportation and Infrastructure and ordered to be printed

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U.S. GOVERNMENT PRINTING OFFICE

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LETTER OF TRANSMITTAL

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON DC 20310-0108

21 OCT 1997

REPLY TO
ATTENTION OF

Honorable Newt Gingrich
Speaker of the House
of Representatives
Washington, D.C. 20515

Dear Mr. Speaker:

Section 101(b)(9) of the Water Resources Development Act (WRDA) of 1996, authorized navigation improvements at Miami Harbor, Florida. The Secretary of the Army supports the authorization and plans to implement the project through the normal budget process.

The authorized project is described in the report of the Chief of Engineers dated December 23, 1996, which includes other pertinent reports. These reports are the result of an Army Corps of Engineers reevaluation of the existing project authorized by Section 101(a)(9) of WRDA 1990. Based on the reevaluation, the Corps recommends extending the existing project by deepening the channel along berths 91 and 93 to a project depth of 34 feet below mean low water, over the existing bottom width of 400 feet, for a distance of about 1,200 feet.

Based on October 1995 prices, the total first cost of the authorized project is estimated at about $3,221,000, with a Federal cost of about $1,800,000, and a non-Federal cost of about $1,421,000. The authorized project maximizes net national economic development benefits consistent with environmental quality. No separable mitigation is required.

The Office of Management and Budget advises that there is no objection to the submission of the report to the Congress. A copy of its letter is enclosed in the report.

Sincerely,

John H. Zirschky
Acting Assistant Secretary of the Army
(Civil Works)

Enclosure

COMMENTS OF THE OFFICE OF MANAGEMENT AND BUDGET

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

The Honorable John H. Zirschky
Acting Assistant Secretary of the
Army for Civil Works
Pentagon - Room 2E570
Washington, DC 20310-0108

Dear Mr. Zirschky:

As required by Executive Order 12322, the Office of Management and Budget has completed its review of the Miami Harbor Channel Improvement.

The Administration supports authorization of this project for construction in accordance with former Assistant Secretary Lancaster's recommendation of February 27, 1997. The Office of Management and Budget does not object to your submitting this report to Congress.

Sincerely,

Kathleen Peroff
Deputy Associate Director
Energy and Science Division

MIAMI HARBOR, FLORIDA

REPORT OF THE CHIEF OF ENGINEERS, DEPARTMENT OF THE ARMY

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

CECW-PE (10-1-7a)

23 DEC 1996

SUBJECT: Miami Harbor Channel, Florida

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on Miami Harbor Channel, Florida. It is accompanied by the report of the district engineer. Section 101(a) (9) of the Water Resources Development Act of 1990 (Public Law 101-640) authorized a project to deepen Miami Harbor Channel, Florida. On 1 November 1991, the Federal Government and the non-Federal sponsor, Dade County, Florida, executed an agreement in accordance with Section 204(e) of the Water Resources Development Act of 1986 (Public Law 99-662) for Dade County to construct the federally authorized project with reimbursement of the Federal share of construction, subject to appropriations. Dade County began construction in December 1991, with construction scheduled for completion in 1997. At the request of Dade County, the U.S. Army Corps of Engineers undertook a reevaluation of the federally authorized project.

2. Section 101(b) (9) of the Water Resources Development Act of 1996 (Public Law 104-303) authorizes the modification of the Miami Harbor Channel, Florida project, subject to completion of a final report of the Corps of Engineers on or before 31 December 1996, and subject to the conditions recommended in that final report. This report is in final response to this legislation.

3. Based on the reevaluation of the Miami Harbor Channel project, the reporting officer recommends modifying the previously authorized project to allow Federal participation in the deepening of an existing non-Federal channel along berths 91 and 93 to a project depth of 34 feet over the existing bottom width of 400 feet for a distance of about 1,200 feet.

4. In 1980 and 1988, Dade County received Federal and State permits to proceed with deepening of the Miami Harbor Channel. The Corps Permit #79B-0623, 6 October 1980, and as modified on 2 September 1988; Florida Department of Environmental Protection (FDEP) Permit #13-19502, 1 July 1980; and FDEP Permit #13-1106409, 7 March 1986, were processed in full compliance with all appropriate Federal National Environmental Policy Act (NEPA) requirements. The modification that is the subject of this report is within the scope of the existing permits and NEPA documentation as well as being located outside of the marine seagrass areas.

5. At October 1995 prices, the estimated total first cost of the authorized project is $3,221,000, of which $1,800,000 would be Federal and $1,421,000 would be non-Federal. Average annual benefits and costs, based on a discount rate of 7.625 percent and a 50-year period of economic analysis, are estimated at $1,077,000 and $256,000, respectively. The ratio of benefits-to-costs is 4.2 to 1. The plan developed by the district engineer is the national economic development (NED) plan.

6. I concur in the findings, conclusions, and recommendation of the reporting officer. The plan conforms to applicable Federal laws and regulatory requirements, is technically sound, economically justified, and socially and environmentally acceptable. The report has been coordinated with appropriate Federal, State, local, and public interests. The plan conforms with essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and complies with other Administration and legislative policies and guidelines on project development. Federal implementation is subject to the non-Federal sponsor agreeing to comply with applicable Federal laws and policies, and that it shall be responsible for the following items of local cooperation:

a. Provide, operate, maintain, repair, replace, and rehabilitate, at its own expense, the local service facilities in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and regulations and any specific directions prescribed by the Federal Government;

b. Provide all lands, easements, and rights-of-way, and perform or ensure the performance of all relocations determined by the Federal Government to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features;

c. Accomplish all removals determined necessary by the Federal Government other than those removals specifically assigned to the Federal Government;

d. Provide, during the period of construction, a cash contribution equal to 25 percent of the total cost of construction of the general navigation features for costs attributable to dredging to a depth in excess of 20 feet but not in excess of 45 feet;

e. Repay with interest, over a period not to exceed 30 years following completion of the period of construction of the project, an additional 0 to 10 percent of the total cost of construction of general navigation features depending upon the amount of credit given for the value of lands, easements, rights-of-way, and relocations provided by the non-Federal sponsor for the general navigation features. If the amount of credit exceeds 10 percent of the total cost of construction of the general navigation features, the non-Federal sponsor shall not be required to

make any contribution under this paragraph, nor shall it be entitled to any refund for the value of lands, easements, rights-of-way, and relocations in excess of 10 percent of the total cost of construction of the general navigation features;

f. Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor owns or controls for access to the general navigation features for the purpose of inspection, and, if necessary, for the purpose of operating, maintaining, repairing, replacing, and rehabilitating the general navigation features;

g. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project, any betterments, and the local service facilities, except for damages due to the fault or negligence of the United States or its contractors;

h. Keep, and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the accounting for which such books, records, documents, and other evidence is required, to the extent and in such detail as will properly reflect total cost of construction of the general navigation features, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and local governments at 32 CFR Section 33.20;

i. Perform, or cause to be performed, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, or rehabilitation of the general navigation features. However, for lands that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigation unless the Federal Government provides the non-Federal sponsor with prior specific written direction, in which case the non-Federal sponsor shall perform such investigations in accordance with such written direction;

j. Assume complete financial responsibility, as between the Federal Government and the non-Federal sponsor, for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features;

k. To the maximum extent practicable, perform its obligations in a manner that will not cause liability to arise under CERCLA;

l. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way, required for construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;

m. Comply with all applicable Federal and State laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and

n. Provide a cash contribution equal to 25 percent of the total historic preservation mitigation and data recovery costs attributable to commercial navigation that are in excess of 1 percent of the total amount authorized to be appropriated for commercial navigation.

7. Dade County intends to seek an amendment of its 1 November 1991 agreement with the Federal Government to allow them to construct the modification described herein. Amendment of the agreement would be subject to approval of the Secretary of the Army and subject to the requirements of Section 204(e) of the Water Resources Development Act of 1986.

JOE N. BALLARD
Lieutenant General, USA
Chief of Engineers

REPORT OF THE DISTRICT ENGINEER

MIAMI HARBOR CHANNEL, FLORIDA
GENERAL REEVALUATION REPORT

SYLLABUS

Dade County and the Port of Miami requested an extension of the Federally authorized channel to the south of Dodge Island and is the prospective sponsor for such an improvement. The request was to consider adding an additional 3,600 feet of channel and a turning basin with a diameter of 900 feet to the Federally authorized project.

The requested channel provides access to four port berths on the channel. An economic analysis indicated a channel extension to only two of those berths and no turning basin was justified. The selected plan is to provide a 34 foot deep channel over a bottom width of 400 feet from the authorized Lummus Island Turning Basin west about 1,200 feet. All excavated material (approximately 218,000 cubic yards) would be placed in the EPA approved offshore disposal site. The total estimated cost and cost sharing is as follows:

TOTAL FIRST COST:	$3,221,000
FEDERAL SHARE:	$1,756,000
NON-FEDERAL SHARE:	$1,465,000

The economic analysis on the selected plan is as follows:

ANNUAL EQUIVALENT COSTS:	$256,000
ANNUAL EQUIVALENT BENEFITS:	$1,077,000
BENEFIT TO COST RATIO:	4.21 TO 1

MIAMI HARBOR CHANNEL, FLORIDA

GENERAL REEVALUATION REPORT

INTRODUCTION

Reevaluation of the authorized Federal project currently under construction was at the request of the local sponsor, the Port of Miami. The request was for an extension of the project west along the south side of Dodge Island.

Construction on the currently authorized project began in December 1991 and is scheduled to be completed in 1997. The sponsor's desire is for report approval and project authorization while new work is still underway on deepening the existing project to 42 feet. The reevaluation report focuses on a channel to the west of the Lummus Island Turning Basin that is currently under construction. The study location is shown on figure 1. The relationship between the requested channel extension, shown as the sponsor's permitted area in figure 2, and the Lummus Island Turning Basin is shown on figure 3.

STUDY AUTHORITY

The project to deepen Miami Harbor is under construction. The authority to reevaluate the project is in the Water Resources Development Act of 1990 (Public Law 101-640). That act provides the project authorization as presented in the Report of the Chief of Engineers, dated September 25, 1989, at a total cost of $67,100,000.

PURPOSE AND SCOPE

The Port of Miami is the sponsor who desires greater depths in the channel south of Dodge and Lummus Islands and west of the authorized Lumus Island Turning Basin, shown in figure 3. The port also desired a turning basin at the west end of that channel to improve vessel handling and maneuvering within the harbor. The evaluation considered adding approximately 3,600 feet to the authorized project and a turning basin in that area. The deeper access was for berths 91, 93, 101, and P-12 as shown in figure 3.

The study took into consideration available information from the area to assess the costs and benefits in an incremental analysis of channel improvements. The study considered depths of 32 to 37 feet. Information from the Miami Port Authority and users enabled an analysis of existing and prospective vessel use. An evaluation of those movements indicated some vessels would transit at greater drafts, resulting in reduced transportation costs. Field work included 11 core borings and 50 rock wash borings in the study area. The economic evaluation determined that sufficient benefits were not available to support the cost of dredging the entire channel and turning basin (all south of Dodge Island). The resulting recommendation is for a shorter section of channel (1,200 feet) to be deepened over the existing bottom width to a selected depth of 34 feet.

PRIOR STUDIES AND REPORTS

There are numerous prior studies and reports on Miami Harbor. The first report (published as House Document number 662, 56th Congress, 1st session) recommended an 18 foot deep channel through Government Cut and a north jetty. Later reports and documents recommended further improvement of the harbor's channels, turning basin and jetties. A list of prior studies and reports in table 1 includes the Miami River which became a part of the Miami Harbor project in the River and Harbor Act of 1945.

EXISTING PROJECTS

Existing Federal projects within the study area include:

- **Miami Harbor** with depths of 36 over a bottom width of 400 feet north of Dodge and Lummus Islands, 42 feet in the Fisher Island Turning Basin, 42 feet over a bottom width of 400 feet in the channel and turning basin south of Dodge and Lummus Islands (under construction), and 44 feet over a bottom width of 500 feet in the entrance channel;

- **Miami River** with a depth of 15 feet over a bottom width of 170 feet tapering to a bottom width of 90 feet for a total project length of 5.5 miles;

- **Intracoastal Waterway, Ft. Pierce to Miami** with a depth of 10 feet over a bottom width of 125 feet;

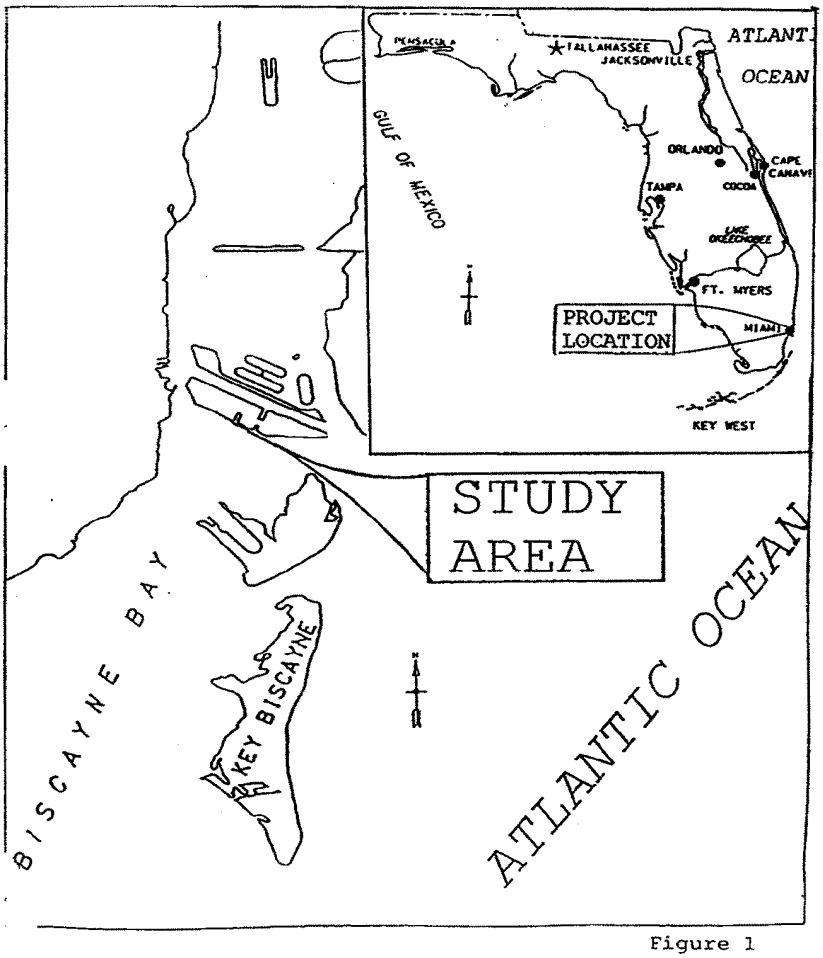
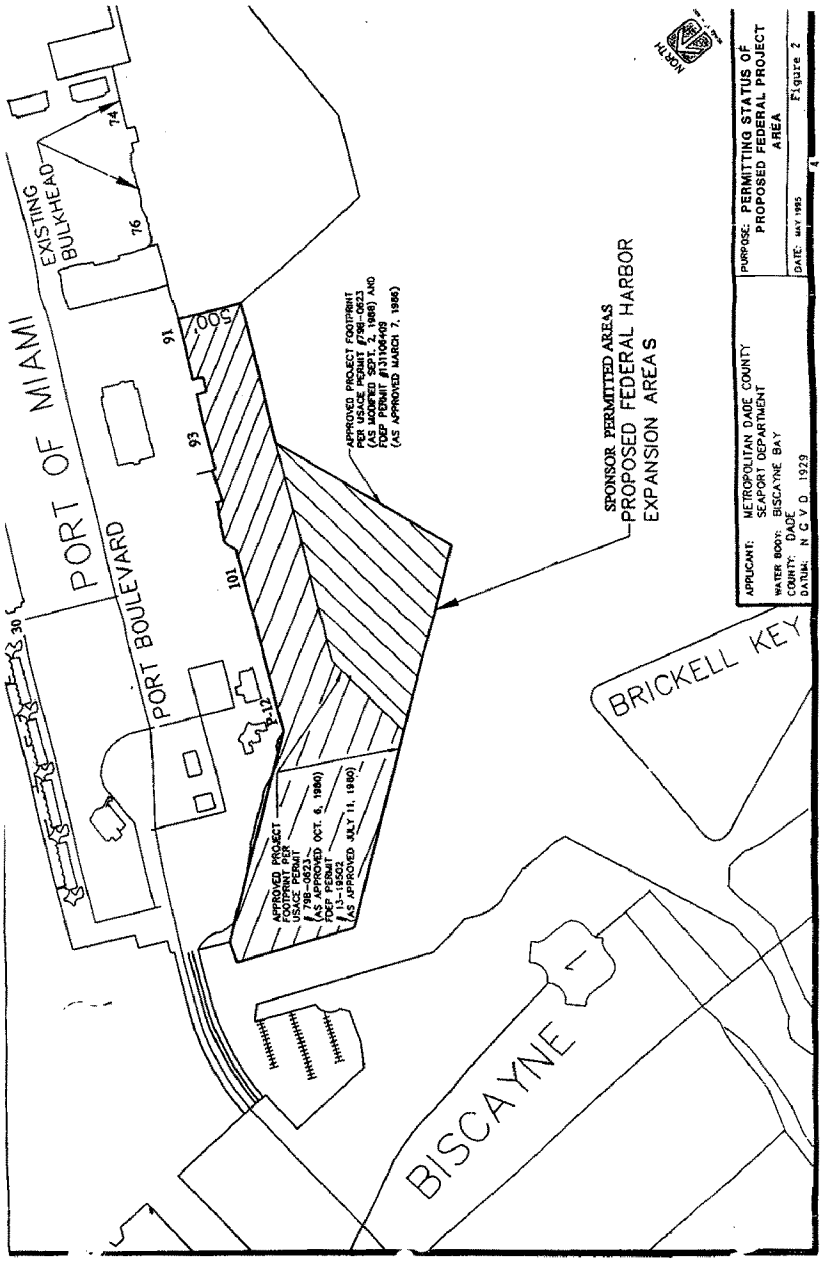

PENSACOLA
TALLAHASSEE
JACKSONVILLE
ATLANT.
OCEAN
GULF OF MEXICO
ORLANDO
CAPE CANAVE
TAMPA
COCOA
LAKE OKEECHOBEE
FT. MYERS
PROJECT LOCATION
MIAMI
KEY WEST
STUDY AREA
BISCAYNE BAY
KEY BISCAYNE
ATLANTIC OCEAN

Figure 1


PORT OF MIAMI
PORT BOULEVARD
EXISTING BULKHEAD
74
76
91
93
101
30
12
500'
APPROVED PROJECT FOOTPRINT PER USACE PERMIT #199100243 AS APPROVED OCT. 6, 1980) FDEP PERMIT 13-18502 (AS APPROVED JULY 11, 1980)
APPROVED PROJECT FOOTPRINT PER USACE PERMIT #199100243 (AS MODIFIED SEPT. 2, 1986) AND FDEP PERMIT #131104-003 (AS APPROVED MARCH 7, 1986)
SPONSOR PERMITTED AREAS
PROPOSED FEDERAL HARBOR EXPANSION AREAS
BRICKELL KEY
BISCAYNE
BISCAYNE BAY
NORTH
APPLICANT: METROPOLITAN DADE COUNTY SEAPORT DEPARTMENT
WATER BODY: BISCAYNE BAY
COUNTY: DADE
DATUM: N G V D 1929
PURPOSE: PERMITTING STATUS OF PROPOSED FEDERAL PROJECT AREA
DATE: MAY 1995
Figure 2

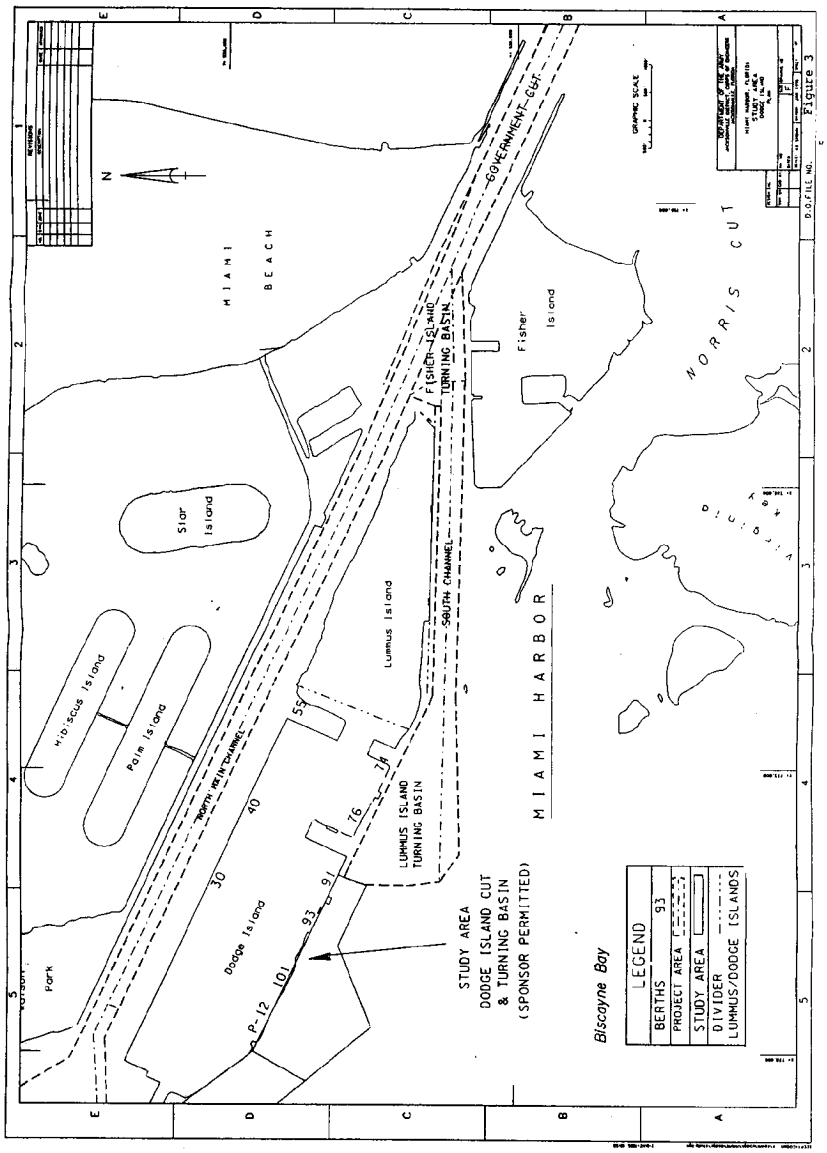

MIAMI BEACH
Star Island
Hibiscus Island
Palm Island
Dodge Island
Lummus Island
Fisher Island
NORRIS CUT
GOVERNMENT CUT
FISHER ISLAND TURNING BASIN
SOUTH CHANNEL
NORTH MAIN CHANNEL
LUMMUS ISLAND TURNING BASIN
MIAMI HARBOR
Biscayne Bay
STUDY AREA
DODGE ISLAND CUT
& TURNING BASIN
(SPONSOR PERMITTED)
LEGEND
BERTHS 93
PROJECT AREA
STUDY AREA
DIVIDER
LUMMUS/DODGE ISLANDS
P-12
101
93
91
76
74
55
40
30
Figure 3

TABLE 1

PRIOR STUDIES AND REPORTS

Type Study[1]	Report Date	Recommendation	Published Documents				
			Congressional				
			Type[2]	Number	Congress	Session	Other[3]
PE	FEB 1895	Favorable	-	-	-	-	-
S	JAN 1897	Favorable	H. Ex	343	53	3	1895
S	APR 1900	Fav/Unf	H	662	56	1	1900
PE	SEP 1910	Favorable	-	-	-	-	-
S	OCT 1911	Favorable	H	554	62	2	-
PE	JAN 1913	Favorable	H. Comm	14	62	3	-
PE	MAR 1918	Fav/Unf	H	1588	65	3	-
PE	MAY 1921	Favorable	-	-	-	-	-
S	JUL 1922	Favorable	H	516	67	4	-
PE	JAN 1929	Favorable	-	-	-	-	-
S	DEC 1929	Favorable	H. Comm	15	71	2	-
S	DEC 1930	Favorable	H. Comm	44	72	1	-
PE	Dec 1930	Unfavorable	-	-	-	-	-
PE	SEP 1931	Unfavorable	-	-	-	-	-
PE	APR 1932	Favorable	S. Comm Print	(*)	73	2	-
S	SEP 1932	Favorable	-	-	-	-	-
S	MAY 1932	Favorable	S	95	72	1	-
S	SEP 1935	Favorable	H. Comm	86	74	2	-
PE	JUL 1937	Favorable	-	-	-	-	-
S	APR 1939	Favorable	H	470	76	1	-
S	MAR 1942	Favorable	H	91	79	1	-
S	JUN 1942	Favorable	S	251	79	2	-
S	APR 1959	Favorable	S	71	85	2	-
S	JUN 1968	Favorable	S	93	90	2	-
S	JUL 1971	Unfavorable	-	-	-	-	-
FR	JUN 1989	Favorable	-	-	-	-	1989
GDM	SEP 1990	Favorable	-	-	-	-	-
DM	OCT 1991	Favorable	-	-	-	-	-

[1] Abbreviations are: PE = Preliminary Evaluation
S = Survey
GM = General Memorandum
GDM = General Design Memorandum
FR = Feasibility Report

[2] Symbols are: H = US House of Representatives Document
S = US Senate Document

[3] Annual Report of the Chief of Engineers by Year

- **Virginia Key and Key Biscayne Beach Erosion Control** project for nourishment of 2.4 miles of beach; and

- **Dade County, Florida, Beach Erosion Control** project for nourishment of 10.5 miles of beach.

The project under construction in Miami Harbor is for deepening the existing channel to 44 feet from the ocean to Government Cut, and 42 feet from there through the Fisher Island Turning Basin along the South Channel through the Lummus Island Turning Basin. Figure 3 shows that project and the study area. As can be seen in that figure, the Lummus Island Turning basin is actually adjacent to part (300 feet) of berth 91. The study excluded that 300 feet from consideration.

EXISTING CONDITIONS

Miami Harbor is located in Biscayne Bay, a shallow salt water sound on the Atlantic coast near the southern end of the Florida peninsula. The City of Miami is situated on the western shore of Biscayne Bay. The bay is about 38 miles long and 3 to 9 miles wide with average depths of 6 to 10 feet. A narrow peninsula and a chain of small islands known as keys separate the bay from the Atlantic Ocean. Shallow natural passages between the keys connect the bay to the ocean. The peninsula has two artificial cuts identified as Bakers Haulover Inlet and Government Cut. Government Cut, near the south end of the peninsula, forms the entrance to the main ship channel leading to Miami Harbor. The harbor is 23 miles south of Port Everglades, 71 miles south of Palm Beach Harbor and about 130 miles northeast of Key West Harbor.

TERMINAL FACILITIES

The Miami Harbor project serves one of the major port terminal complexes in Florida. Total tonnage moving through the port during the year 1994 was about 5.5 million short tons. The majority of that tonnage is high value general cargo transported in trailers and containers. Most of that tonnage moves through deep draft container terminals on Dodge and Lummus Islands belonging to the Port of Miami. The harbor project also provides access for smaller general cargo vessels that are going to terminal facilities on the Miami River.

Fisher Island Terminal. Miami Harbor has a small bulk cargo operation. The bulk cargo is petroleum products, handled at the tank farm on Fisher Island. The tank farm is a private operation whereas the container terminals are a public operation. The tanks on Fisher Island store liquid bulk commodities such as distillates and residual fuel oil. Virtually all bulk tonnage movements at Miami Harbor is though that facility.

Dodge Island Terminals. The Port of Miami owns the lands and terminals on Dodge Island and leases them to shippers for their use. The terminals on the north side of Dodge Island are primarily for cruise ships, which handled over 2.9 million passengers in 1994. Some of those terminals (berths 30-55) also handle general cargo and containers. The priority for those berths is given to the cruise ships. If a cargo vessel or roll-on/roll-off (RO-RO) ship utilizes a berth needed for a cruise ship, the cargo operation moves to another berth or accelerates to enable a speedy departure. Some warehouses exist on the north side to handle dry cargo needing no refrigeration.

The south side of Dodge Island has container storage areas with the berths serving mainly smaller RO-RO ships. Cargo handling is mostly at berths 74, 76, 91, and 93. Berth 101 has little or no cargo movement and berth P-12 is primarily a passenger/cargo ferry berth. The cold storage warehouse near berths 91 and 93 is mainly for storage of fruits and vegetables. Those berths also have a container storage yard near them.

Lummus Island Terminals. The Port of Miami owns the lands and terminals on Lummus Island and leases them to shippers for their use. The main center of cargo operations and development is on Lummus Island. That island is a 225 acre terminal and container complex. The cargo handling berths on Lummus Island are all along the south side. There are no berths on the north side. The port has 10 gantry cranes on the south side to lift containers on and off the vessels. Most of the land area on Lummus Island is for container storage in two large container yards.

Miami River. Over 11 major shipping companies are currently operating terminals on Miami River. Those terminals are mainly loading points for general cargo destined for ports in the Caribbean Basin. Some of the cargo is in containers. Access to those terminals is through Miami Harbor on the main ship channels.

EXISTING CHANNEL

The study area under consideration for improvement is on the south side of Dodge Island. Ship access to that area is over the existing Federal project channel in the entrance, around Fisher Island, and along the south side of Lummus Island. The channel south of Lummus Island has an authorized depth of 42 feet below mean low water. Construction is underway to provide that depth in the channel and turning basin at the junction of Dodge and Lummus Islands. That basin will actually extend past berths 74 and 76 and encompass a portion of berth 91 on Dodge Island. The channel under consideration in the study area is west of the turning basin, alongside berths 91, 93, 101, and P-12.

Current channel conditions in the study area along the south side of Dodge Island enable only smaller commercial cargo vessels use. Depths in that area range from 24 to 26 feet over a bottom width of about 400 feet. The controlling depth in December 1992 was about 24 feet. All depths in this report are in reference mean low water. The mean tidal range in that area is about 2 feet. Vessels that tend to use the area are normally on fixed schedules and do not depend on tides to maintain movement flexibility.

EXISTING BASIN

The Port of Miami has a small, existing basin on the west end of Dodge Island to facilitate vessel turning. That basin is a primary turning point for Miami River vessel traffic. The basin not only serves the Miami River traffic but the traffic to berths P-12, 91, 93, and 101. Existing conditions appear adequate for current usage. The new authorized turning basin at the junction of Dodge and Lummus Islands is larger and will be able to serve vessel traffic to those berths if the existing basin is not sufficient in size.

VESSEL FLEET

The channel on the south side of Dodge Island and west of the Lummus Island Turning Basin has two vessel fleets using the waterway. One fleet uses terminals on Miami River and contains smaller vessels in the island trade. That fleet uses Miami Harbor for access to Miami River. The other fleet comprises a slightly larger vessel that uses the terminals along the south side of Dodge Island.

Miami River. The smaller vessels seeking access to Miami River are at least 45 in number. Those vessels make about 2,000 trips a year through Miami Harbor. They range in lengths up to about 350 feet and have maximum capacity drafts of about 14 to 16 feet. The movement of those vessels adds to the traffic in Miami Harbor and are frequently involved in passing situations along the south side of Dodge and Lummus Islands.

Dodge Island. The five berths on the south side of Dodge Island serve one passenger/cargo ferry, small cargo ships as well as RO-RO type vessels. The passenger/cargo ferry is at the westerly most berth (P-12) and operates on a daily cycle with periodic trips of several day duration. That ship is about 440 feet in length, 72 feet in beam, and 18 feet in draft. The cargo vessels range in size depending on their trade routes.

The vessels under consideration are in two main trade routes. The larger vessels are in service on the longer trade route. That is the Miami-South America trade route which has vessels with design drafts of 25 to 30 feet. The second is the Miami-Central American/Caribbean trade route that currently has the relatively smaller vessels with design drafts of 16 to 22 feet.

GEOLOGY AND SOILS

Miami Harbor typically has 1 to 8 feet of sands, clays or silts overlaying a limestone bedrock. The limestones have cavities and solution holes which may be open or filled with sediments.

The limestones are from two geologic formations. The first is the Miami Oolite which is composed of a permeable oolitic limestone. The second is the Fort Thompson Formation which is composed of sandy limestones, sandstones, and sand seams. The geology and soils are discussed in greater detail in Appendix A.

In the Miami area, the Miami Oolite and the Fort Thompson Formation combine to form the Biscayne Bay Aquifer which serves as the primary source of drinking water for the south Florida area.

The Biscayne Bay Aquifer has been designated by the US Environmental Protection Agency as a "Sole source aquifer". This designation, under the Safe Drinking Act of 1974 (PLO 93-03523), requires studies to insure that Federally funded projects do not contaminate designated aquifers.

HISTORIC PROPERTIES

Archival research and consultation with the Florida State Historic Preservation Officer (SHPO) have been conducted for the Miami Harbor project. Biscayne Bay is frequently mentioned in historic literature. Therefore significant historic properties may be located in the Miami Harbor vicinity. Shipwrecks occurred within the bay, although exact locations of these wrecks are not known. The channel segments that are under consideration for improvement have been previously dredged to rock. Dredged material will be disposed of in an EPA approved offshore disposal area. Significant historic properties are not likely to be located within the existing channel or in the proposed disposal areas.

WITHOUT PROJECT CONDITION

Existing channel conditions in the study area limit vessel drafts to berths 91, 93, 101, and P-12. Unless dredging deepens the existing depths, there are only two options available for moving cargo to terminal facilities in those areas. One is to use vessels with drafts that enable access over existing depths and widths. The second is to use another terminal at the Port of Miami and move the cargo overland to the facilities.

Berth P-12. Use of that berth is mainly for the passenger/cargo ferry operations. Information from the operator indicates no change in operations or vessels from existing conditions. The vessel is of sufficient size to enable operations from that berth without extensive problem. No change in that operation is apparent in the near future.

Berth 101. Available information indicates that berth has very little use. The sponsor indicates no change in plans for prospective use beyond current conditions. Usage now is for smaller vessels that needs no deepening for efficient operation. No anticipated change in that operation is apparent in the near future.

Berths 91 and 93. Larger combination RO-RO/LO-LO vessels, needing access to those berths, have operating drafts that exceed existing conditions. Using lesser drafts for access does not enable satisfactory service in a cost efficient manner to berths 91 and 93. The current practice is to use another terminal with deeper access depths and move the cargo overland to the terminal

area near berths 91 and 93. Smaller vessels, using those berths, have no problems based on current information. The future development of trade indicates additional vessels will be added during the project life. Those vessels will be lift-on/lift-off (LO-LO) container ships. Vessels with deeper drafts will need to use other terminals and move cargo overland resulting in more landside traffic congestion.

Overland Cargo Movement. Currently, extra equipment is necessary to load/unload the ships. That equipment includes tractors, flatbeds and forklifts. The RO-RO containers need tractors to remove the cargo in trailers from the vessel to the dock. Additional "shuttle" tractors are necessary to move them one mile from the unloading dock across the port to the terminal area near berths 91 and 93 for final positioning. Forklifts load self-propelled rolling stock onto flatbeds for movement across the port as well as non-self-propelled cargo.

The prospective container ships and some existing ships have LO-LO cargo (containers without a chassis) for movement. The existing ships have strengthened weather decks that allow the stacking of containers for transport as well as RO-RO on the lower decks. Cranes handle the containers between the ship and a flatbed trailer. A tractor moves containers on trailers between the ship and storage area for final positioning in the stacks. The RO-RO cargo is moved as it would be from a RO-RO vessel. Additional "shuttle" tractors, flatbeds and forklifts are necessary for that operation to handle the containers under the without project conditions.

PROBLEM IDENTIFICATION

The Port of Miami has serious congestion problems on Dodge and Lummus Islands with the large volume of container movements. The port desires to minimize that congestion. The shippers share that desire to minimize traffic and reduce costs. The channel to the south of Dodge Island and west of the authorized turning basin does not have sufficient depths and contributes to that problem. A shipper that provides a container service dependent on schedules can not rely on tidal conditions for operating depths. Attempts in the past to maintain schedules with the hard bottom conditions and tides have resulted in vessel damage. Pilots define perfect conditions as a slack high tide with no wind, which rarely happens. The controlling depth in the study area was about 24 feet in December 1992.

BERTH USAGE

Inadequate channel depths now cause inefficient berth usage on the south side of Dodge Island and scheduling problems for berths with deeper channel access. Larger container vessels with deeper drafts can not fully access their terminals and storage areas adjacent to berths 91 and 93 to load or unload cargo. The most cost efficient alternative for the shippers is to berth on the north side of Dodge Island which has a channel depth of 36 feet and incur significant overland container movement costs.

LANDSIDE TRAFFIC CONGESTION

A ship on the north side of Dodge Island with its container area and terminals on the south side is a problem. The cargo associated with that ship must move across the port. That distance is about 1 mile in a north-south direction. The main flow of traffic in the port is in an east-west direction. Transport of cargo between the north berth and south terminal area is across that heavily congested traffic area. The problem becomes even more prominent as the trend is to move more cargo on the larger and deeper draft vessels in the world fleet. The vessels now transiting the south channel draw between 12 and 26 feet. Replacement vessels with drafts between 25 to 35 feet are expected to reduce the use of smaller ships within the next ten years. Land and berth use is critical at the port.

WATERWAY TRAFFIC

Miami River ship traffic no longer utilizes the main channel on the north side of Dodge Island for access. Those ships now use the channel on the south side of Dodge and Lummus Islands. The impact is more than 2,000 ships a year passing through the study area. The small, existing, turning basin on the western end of Dodge Island is where most of those vessels turn either before entering or upon leaving Miami River.

The Port of Miami desires the enlargement of the existing basin on the west end of Dodge Island to facilitate vessel turning. That basin would not only serve the Miami River traffic but the traffic to berths P-12 and 101.

NEEDS AND OPPORTUNITIES

Port users have ships with drafts that are more than existing depths to berths along the south side of Dodge Island. The users want to load the ships to deeper drafts for direct access. To provide that access and reduce the other problems at the port will involve deepening the existing navigation channel along berths 91 and 93.

The constraint in channel depth causes higher transportation cost for the delivery of cargo. Direct access to terminals requires a reduction in the vessels' draft (light loading) that means less cargo per trip. To avoid light loading, a deeper loaded vessel can dock at another terminal in the port with deeper access depths. That option involves the use of a berth at a different location in the port and results in higher landside costs to move cargo across the port between the ship and its container storage area and terminal facilities (plus more time in port).

Opportunities arise from the channel deepening. One is the reduced risk of groundings associated with vessel transits into and out of the Dodge Island Cut. A second is more efficient commodity movements. Increases in efficiency occur when vessels:

- Can carry more cargo per trip for less cost,
- Require fewer scheduled port visits to deliver cargo for a reduction in port traffic congestion, and
- Require less time in port to move cargo associated with each port visits.

The result is more efficient movement of traffic and cargo into and out of the harbor.

PLANNING OBJECTIVES

The Federal objective in water and land resource planning is to make a contribution toward National Economic Development (NED) consistent with protecting the nation's environment. Specific objectives in conducting the study were to determine:

- The nature and extent of the navigation problems in the Dodge Island Cut;

- The anticipated future navigation needs of the area; and

- The natural, cultural and recreational resources that would be affected by the navigation improvements.

ALTERNATIVE CONSIDERATIONS AND PROSPECTIVE CONDITIONS

The Port of Miami owns the lands and terminals on the south side of Dodge Island and has four shipping companies that will use the terminals and land in that area. Information from those shippers provided an indication of the prospective use of that area. An evaluation of that potential usage provided the basis for prospective conditions and potential economic benefits for the channel deepening.

NO ACTION PLAN.

As it implies, the no action plan is for no structural changes in the existing conditions at the Port of Miami. The shippers currently use the most efficient means to handle cargo in the area and no changes are apparent to make those conditions more efficient and productive. The plan offers no solution to meeting objectives of reducing berthing and overland traffic problems in the port area. The plan provides the base condition for prospective future conditions without further navigation improvements to the channel for evaluating transportation savings.

The no action plan offers one potential solutions. The channel width on the existing waterway to the south of Dodge and Lummus Islands is adjacent to shallow water in Biscayne Bay. Widening the channel in that area would require extensive excavation and possibly environmental mitigation for impacts to sea grass. Pilots attempt to coordinate traffic to either avoid or minimize unsafe passing in that reach. Coordination with the pilots on vessel movements in that reach would enable better passing situations and minimize problems. The passing of small vessels is possible in the existing channel width. The passing of a larger and smaller vessel is possible under certain conditions. Coordination with the pilots on all cargo vessel movements in that reach would enable safer passing situations within the existing channel width without widening.

STRUCTURAL ALTERNATIVES

The analysis of alternatives considered vessel traffic to the four berths along the desired channel extension and the turning basin at the end of that channel. Information from four shipping companies provided the basis for the analysis. The evaluation took into account the potential developments possible with deepening using the available data from users and the sponsor. To comply with incremental analysis criteria, each berth along the waterway became a separate increment for consideration and justification except berths 91 and 93. Those two berths are adjacent to each other and are commonly used together to handle the deeper and larger vessels. Part of berth 91 is already adjacent to the authorized Lummus Island Turning Basin. The need for a turning basin at the end of the channel was also a separate economic determination.

Berth P-12. Information from the passenger/cargo ferry operator at berth P-12 indicate no significant problems with vessel operations under existing conditions. The ship does have a cargo deck and can move a limited amount of RO-RO cargo. The operator indicated no change in vessel operations in the near future with a potential improvement. Lacking identification of a problem with current usage or support for potential use of a deeper draft ship in that increment with deepening, the economic analysis had no basis for a benefit evaluation with an improved channel. The increment of channel to that berth has no benefits to support deepening and received no further consideration.

Berth 101. The sponsor indicated no regular use of the berth. Current operations involves smaller vessels that need no deepening or other improvements for access. The sponsor indicated no change in that operation is apparent in the near future with or without deepening. Lacking identification of a problem with current usage or projected use of a deeper draft ship in that increment with deepening, the economic analysis had no basis for a benefit evaluation for a deeper channel. The increment of channel to that berth has no benefits to support deepening and received no further consideration.

Berths 91 and 93. Projections of usage without improvement indicate those berths are necessary now as well as in the future. The Port of Miami has potential users for those berths. The potential users have larger RO-RO vessels that can not use the berths now and anticipate the use of even larger LO-LO vessels in

the future. The port needs a deeper access channel to those berths for less vehicular traffic congestion in the port and reduced costs to the shipper. Further consideration of prospective use of those berths provided a basis for determining the justification for channel improvements.

Turning Basin. The Port of Miami desires the enlargement of the existing basin on the west end of Dodge Island to faciiitate vessel turning. That basin currently serves the Miami River traffic as well as vessels to berths P-12 and 101. An analysis of basin use indicated no problems associated with current or prospective use with or without improvement. Identified vessel traffic to either of those berths had no projected change in vessel use with an improvement. That situation provided no basis for future benefits to improve the turning basin. The increment for enlarging the existing turning basin has no benefits and received no further consideration.

BERTHS 91 AND 93 - CHANNEL ALTERNATIVE

The Port of Miami owns the land adjacent to berths 91 and 93. Any improvements under consideration to the channel for access to those berths is a multiple owner consideration. The prospective benefits are primarily from container movements across the port between the container stacking area and the ship berth. The benefit analysis includes only those commodities that the proposed improvements would impact in the future projections.

Prospective Tonnage. The prospective tonnage in table 2 below is for the whole Port of Miami in trade with other ports in Central and South America. No significant difference in that tonnage is estimated with or without channel improvements.

TABLE 2

COMMERCE PROJECTIONS

Year	Tonnage
1994	3,400,000
2000	4,191,000
2005	4,848,000
2010	5,505,000
2011	5,638,000
2048	5,638,000

The cargo in table 2 includes major imports of fruits, vegetables, and apparel. Primary exports include paper, general cargo, and automobile parts. Most of that tonnage now moves in containers and is likely to continue in the future.

The shippers with landside storage area at berths 91 and 93 have a reported history of increased tonnage and expanded trade routes involving port in Central and South America. Their ships move the cargo between Miami, Central America, and South America. The affected commerce through berths 91 and 93 is on a small percentage of that estimated tonnage growth. That portion is not likely to change significantly with or without the channel improvement. The actual estimated tonnage remains unspecified at the request of the shippers.

Prospective Vessel Fleet. The shippers with landside storage area at berths 91 and 93 are likely to make adjustments in their vessel fleets to handle the expanding trade routes and tonnage. The expected characteristics of vessels in those trade routes is in table 3.

TABLE 3

DESIGN CHARACTERISTICS OF FLEET VESSELS

Vessel Design Drafts in Feet	Deadweight Tons (DWT)	Length Overall (LOA) in Feet	Beam in Feet
16 thru 21	2,740 - 10,190	267 - 527	44 - 87
22 thru 24	7,580 - 12,440	428 - 527	53 - 77
25 thru 30	13,410 - 13,600	499 - 559	82 - 86
31 thru 35	15,000 - 26,500	600 - 650	80 - 90

To handle the potential growth in tonnage, the likely future condition is for vessel changes within that fleet. Those changes are estimated to be the same with or without improvement. As the trade continues to develop rapidly, expectations are that the fleet composition will move toward larger vessels. The estimated frequency of projected vessels calls, expecting to use landside areas at berths 91 and 93, is in table 4 over a prospective project life of 50 years. Those prospective vessel calls are likely with or without improvement.

TABLE 4

PROSPECTIVE VESSEL CALLS
WITH OR WITHOUT IMPROVEMENTS

Design Draft in Feet	Estimated Vessel Calls by year				
	1998	2003	2008	2018	2048
16 thru 21	47	30	30	30	30
22 thru 24	165	160	160	125	125
25 thru 30	36	42	50	60	60
31 thru 35	30	45	60	75	75

The design vessels with draft of 25 through 35 feet in table 4 show an increase in scheduled calls per year with lesser draft vessel showing a decrease. The vessels with drafts of 25 through 30 feet are the semi-container types which carry both RO-RO and LO-LO cargo. RO-RO cargo can be either trailers or other wheeled vehicles such as farm machinery. The vessels with drafts of 31 through 35 feet are the LO-LO container carriers with no RO-RO stock. A deeper channel would enable those vessels to handle cargo at either berth 91 or 93 without having to move the cargo across the port from another berth.

Cargo Handling. The scenarios for handling the cargo from the ship to the wharf is similar under either the with or without project conditions. The potential saving is the net difference in cost to get the cargo off the wharf to the holding area at the port.

A deeper channel for access to berths 91 and 93 would enable faster and more efficient movement of the cargo to the adjacent storage area. A tractor would move the RO-RO cargo off the vessel to the storage area quicker for final positioning within the storage yard. Forklifts would load other non-self-propelled cargo onto flatbed trailers for faster movement into the storage area for unloading. Drivers would move self-propelled rolling stock such as farm machinery directly off the vessel into the storage area. Cranes would remove the LO-LO containers and place them on flatbeds for faster movement into the storage yard for final positioning. Top-loaders may also take containers from the wharf, if final positioning is in a section of the storage area near the ship.

Reduced Handling Costs. The more direct access to the available storage yards enables a savings in operating cost. The savings is the measure of benefit for a deeper channel. Benefits from dredging to deepen the channel are from reduced landside cost in handling cargo. The reduction is possible with the location of the deeper draft ships closer to the storage area for the cargo. The relocation of the ship enables a reduction in:

- Landside crew wages, essentially overtime for stevedores;
- Security personnel needed;
- Number of rigs needed to transport containers to or from the ship to be loaded or unloaded; and
- The average amount of time necessary for the vessel to be in port.

The total projected benefits from the above savings are in table 5 for the different channel depths under consideration. Details on the development of those benefits are not a part of this report at the request of the shippers. The estimated annual benefits in that table are over an economic project life of 50 years. The estimated start of those benefits is with the completion of construction in 1998. The average annual equivalent values in that table are at an interest rate of 7.625 percent over the economic life of the project for each depth under consideration.

TABLE 5

BENEFIT ESTIMATES
All amounts in $1,000's

Channel Depth Feet	Annual Benefits							Ave. Annual Equivalent Values
	1998	2003	2008	2018	2028	2038	2048	
27	0	0	0	0	0	0	0	0
28	25	30	36	46	46	46	46	36
29	90	110	131	165	165	165	165	131
30	213	260	310	392	392	392	392	311
31	312	393	475	604	604	604	604	474
32	378	496	613	787	787	787	787	608
33	514	710	898	1,162	1,162	1,162	1,162	883
34	619	875	1,119	1,452	1,452	1,452	1,452	1,077
35	619	875	1,119	1,452	1,452	1,452	1,452	1,077

Dredging Considerations. The dredging industry has many different types of dredging equipment. Some of that equipment is not capable of dredging rock without blasting to enable removal. Other equipment is capable of dredging rock depending on the hardness. The dredging contractor that is deepening Miami Harbor now has equipment on site that can remove the rock without blasting. The Port of Miami has, as part of that dredging contract, the excavation of material in the channel under consideration for deepening. That inclusion was in anticipation of obtaining Federal authorization to deepen the channel beyond the existing authorized work. The port wants to do the work and receive reimbursement on the authorized project for the Federal share of the cost.

Blasting to remove material in Biscayne Bay has considerable opposition from local environmental groups as well as State and Federal interest. Options for use of other dredging equipment that could remove rock was a primary consideration in the following discussion.

- A cutterhead suction Dredge can remove the rock but low production rates were a cost problem when dealing with the rock hardness to deepen Miami Harbor.

- The type dredge now working in Miami Harbor is new to the United States and operates like a large backhoe. The bucket on the dredge has pressure sensors along the outside edge of the bucket and back along the extension arm that attaches to the bucket. The operator uses the sensors to feel for joints in the rock and then rip them open.

- The dipper dredge can remove both the rock and sand at the same time with a 21 cubic yard rock bucket.

The method selected for cost estimating was a 54 cubic yard mechanical dredge with a 21 cubic yard rock bucket. It is a similar dredge to the equipment on site. Both can remove the rock. The dredge on site is likely to do the proposed work if the project receives authorization. However, in the event that authorization is not received in an appropriate time frame mobilization and demobilization costs were included in the cost estimate.

Dredged Material Management Plan (DMMP). The DMMP is primarily a disposal plan for all the dredging plans under consideration. The dredged material includes initial construction quantities and future maintenance amounts in shoals from sediments over time.

Considerations for disposal included the Ocean Dredged Material Disposal Site (ODMDS), a designated ocean disposal site offshore from Miami, and upland sites in and around the port. The objective of the DMMP is to provide for disposal of dredged material over a period of at least 20 years.

Initial Construction. Initial construction to extend a channel to berths 91 and 93 involves dredging quantities ranging from 173,000 to 290,000 cubic yards for depths of 32 to 37 feet. About the only sizable upland area that would handle that much material is on Virginia Key near the port. Dredged material from deepening the entrance channel at Miami Harbor went on that island. Coordination with the sponsor and Dade County indicates that island is no longer available. Current dredging operations to deepen the interior channel south of Lummus Island involve the placement of dredged material from that area in the ODMDS.

The initial dredging quantities for a channel to berths 91 and 93 involves considerably more material than there is upland space available for placement on Dodge and Lummus Islands. The limited upland area at the port is a problem and is almost totally dedicated to the movement of cargo. No permanent or temporary upland disposal site is available strictly for that use.

Coordination of the proposed work with environmental agencies included efforts to identify beneficial uses of dredged material. The effort resulted in no identified plans for use of dredged material to benefit the environment. Environmental agencies are very reluctant to use dredged material from Biscayne Bay to fill holes or create shallow water habitat in that bay. No further consideration given to the use of material for beneficial use at this time.

The dredged material, both sand and rock from initial construction, is suitable for disposal in the ODMDS. Available information indicates that site is the best alternative for disposal of initial construction material. Current operations to deepen the channel south of Lummus Island involves the use of the ODMDS for disposal of excavated material. Continued use of the ODMDS is consistent with that operation.

Maintenance. The Miami Harbor channels and turning basins are within the Biscayne Bay Aquatic Preserve. The port is aware of the need to minimize any accidental spills and has emergency measures to avoid major contamination problems. The port expects to have a clean operation that avoids potential

problems with contamination. Those are factors that influence the future disposal of material.

The Miami Harbor project does include Miami River. Efforts are underway to remove unsuitable sediments in that river to avoid their movement into Biscayne Bay and the port area. The overall potential for contamination in port sediments is small and has not been a problem for disposal. No problem anticipated in the future with regard to sediment removal.

Past experience with maintenance of the channels and turning basins in Miami Harbor indicate very little shoaling. The small additional channel length proposed for improvement would have little impact on the total periodic harbor maintenance amounts. The very small amount of dredging anticipated with maintenance and the other precautions to prevent sediment contamination offer little opportunity for problems. Should a problem develop, very small open areas do exist around the port. They could be made available for temporary storage over a limited period of time. Placement of small amounts of material in those areas may be possible only with immediate removal.

Any maintenance material, removed in the future from the proposed project, is to likely go in the ODMDS. Placement in that site is possible only if that material meets the required Environmental Protection Agency standards for disposal. Port of Miami relies on the ODMDS as the major disposal area for harbor maintenance. No apparent capacity problems exist in the ODMDS for the next 20 to 30 years or longer. The port does not foresee any problems with handling small quantities of material that may not be acceptable for placement in the ODMDS.

Cost Estimates. An economic analysis of the considered plans for deepening involves an estimate of costs for comparison. The estimates have two components, first costs and annual costs. To enable a comparison, a conversion is necessary to an average annual equivalent (AAEQ) value for those components. The economic analysis compares the AAEQ cost and benefits on each considered plan to arrive at the National Economic Development (NED) Plan.

Total First Costs. The total first costs is for all the initial operations to remove the material from the bottom of the existing channel to make it deeper over a specific bottom width. Such operations start with more detailed engineering planning and generally include the following processes:

- Preconstruction engineering and design,
- Movement of equipment on and off the site for work,
- Excavation of material,
- Environmental monitoring,
- Transport of material to the disposal site,
- Contract administration of the construction,
- Installation or relocation of navigation aids, and
- Land, easements, rights of way, utility relocations and disposal area preparation.

The cost of all those items equals the total first cost. The cost of the general navigation feature, identified in cost sharing, includes the first six items in the above list. The total economic first cost is the total first cost with interest during construction (IDC). The IDC varies with the construction period which requires about 6 months for channel depths of 30 to 32 feet and about 6 1/2 months for depths of 33 to 34 feet. The estimated total first costs are in table 6 along with the IDC for each depth channel under consideration. Appendix A has the engineering and develops a sample estimate of the total first cost in more detail.

Navigation markers currently exist in the channel and the United States Coast Guard (USCG) maintains those markers. Preliminary coordination indicates no requirement for the installation or relocation of navigational aids. No cost for navigation aids is in the estimated cost. Should a minor relocation be necessary, the cost would be minimal. The USG has the responsibility for navigation aids and any cost are 100 percent Federal.

Real estate cost are minimal with the main cost being mainly administrative on all the depth plans. Field coordination and office records indicate no potential reallocations in the area and the use of the ODDS requires no estimated upland areas for disposal. Real estate cost are 100 percent sponsor costs for the alternative depth plans under consideration.

The economic life of a project begins after completion of the work. The average annual equivalent cost is the interest and amortization of the total economic first cost over the project life of 50 years at an interest rate of 7.625 percent. Table 6 provides those estimated values.

Annual Cost. The annual cost comes from period maintenance expenditures usually on an annual basis to enable continued use of the considered projects. The two components of that cost are

normally shoal removal to maintain channel depth over the bottom width and navigation aids that the USG maintains.

Maintenance of the considered channels to berths 91 and 93 is not expected to be significant. The small additional channel length proposed for improvement would have little impact on the overall harbor maintenance program. The estimated total average annual equivalent cost for harbor maintenance is a negligible cost increase too small to estimate. No additional cost is in the estimate for the USG to maintain the existing navigation aids already in place along the channel.

TABLE 6

ECONOMIC COSTS 1/

Items	Amounts by depths in feet 32	33	34	35
Total first costs--	$2,731	$2,967	$3,221	$3,486
IDC ----------	$44	$48	$52	$56
Total economic first costs -------	$2,775	$3,015	$3,273	$3,542
AAEQ costs				
Interest and amortization 2/-	$217	$236	$256	$277
Annual maintenance costs ----------	$0	$0	$0	$0
Total AAEQ costs -	$217	$236	$256	$277

1/ All amounts shown are in 1,000's
2/ Interest and amortization of total economic first cost.

Economic Analysis. The average annual equivalent benefits and costs determine the economic feasibility of a deep draft navigation project alternative. National Economic Development Benefits (NED) are the contribution of a project to the national output of goods and services. The benefits for the extension of the channel to berths 91 and 93 are the result of reduced

transportation costs. NED costs are the economic value of resources consumed in the construction, operation and maintenance of the project. Any considered alternative with positive net NED benefits after deducting costs is economically justified. The NED plan is the one that maximizes net benefits. The AAEQ costs and benefits are in table 7. The NED plan from that table has a depth of 34 feet.

TABLE 7

ECONOMIC analysis

Items	Amounts by depths in feet 32	33	34	35
AAEQ Benefits---------	$608	$883	$1,077	$1,077
AAEQ Costs----------	$217	$236	$256	$277
Net Benefits in Excess of costs ----------	$390	$647	$821	$800
Benefit-to-Cost Ratio-	2.8	3.7	4.2	3.9

* All dollar amounts are in 1,000's

SELECTED PLAN

The selected area for deepening is an existing channel along berths 91 and 93 as shown in figure 4. The NED plan is for a project depth of 34 feet over the existing bottom width of 400 feet for a distance of about 1,200 feet.

DESIGN CONSIDERATIONS

The primary elements for design of the channel are the design vessel, traffic, existing bottom conditions, and available turning areas. Traffic along the south side of Dodge and Lummus Islands has about 2,000 vessels a year using the channel for access to Miami River along with vessel traffic using the port terminals on that south side. That averages to over five ships a day. Two-way traffic needs to be a design consideration for the channel to berths 91 and 93.

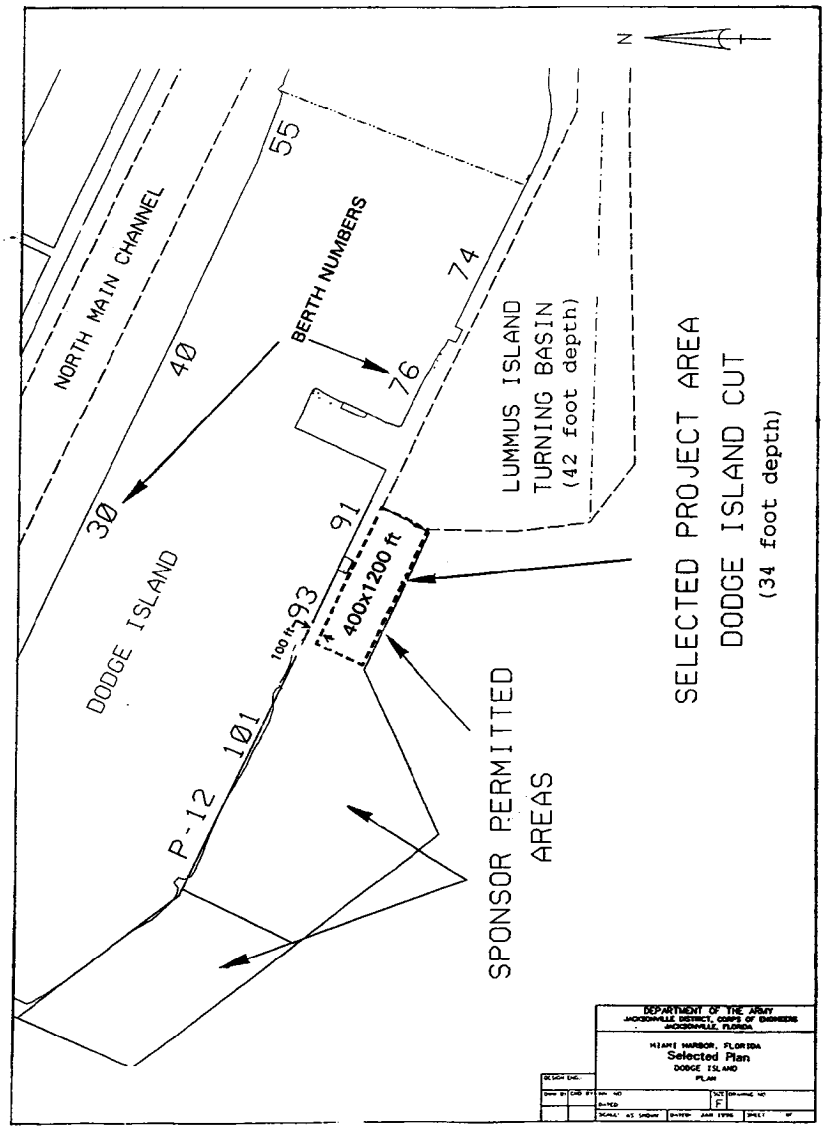

N
NORTH MAIN CHANNEL
55
40
30
BERTH NUMBERS
76
74
LUMMUS ISLAND
TURNING BASIN
(42 foot depth)
SELECTED PROJECT AREA
DODGE ISLAND CUT
(34 foot depth)
91
93
400x1200 ft
100 ft
DODGE ISLAND
P-12
101
SPONSOR PERMITTED
AREAS
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
MIAMI HARBOR, FLORIDA
Selected Plan
DODGE ISLAND
PLAN

Figure 4

The most likely passing situation would involve a typical vessel using Miami River and the design vessel for berths 91 and 93. The passing of two design vessels for berths 91 and 93 would rarely occur. If that situation were to happen, the pilots would likely delay one of the vessels so the passing could occur in the Lummus Island Turnirg Basin. Such a delay would be minimal as the basin is adjacent to the selected channel deepening.

DESIGN VESSEL

The Feasibility Report for Miami Harbor (Miami River), dated March 1990, provides information on vessel sizes using the river. Current vessel usage of that river is about the same and no significant change is likely in the near future. The design vessel, selected from those using Miami River, is a composite size as follows:

Length - 270 feet
Beam - 50 feet
Draft - 15 feet

The design vessel for berths 91 and 93 comes from projected fleet used in determining the benefits for channel deepening. That vessel has the following dimensions:

Deadweight tons (DWT) - 24,000
Length - 560 feet
Beam - 88 feet
Draft - 31 feet

DESIGN CHANNEL WIDTH

The design conditions for channel bottom width take into consideration waterway traffic, vessel size, and area conditions. Pilots indicate a lot of problems with wind conditions in that area of the channel. The channel bottom is likely to be rock and not soft material. Future conditions indicate significant traffic congestion in the channel. Two-way traffic is essential to minimize congestion and delays. The most likely passing situation for design purposes is with the Miami River design vessel and the berth 91 and 93 design vessel. The design criteria for width is as follows for those two vessels:

Lane Identification	Percentage	Channel Width By Ship	
		River	Berth 91/93
Bank Clearance	80	40 feet	70 feet
Maneuver	170	85 feet	150 feet
Clearance	80	-	70 feet

The total width from the above numbers on the two ships is about 415 feet. A design width of 400 feet is the selected width for the channel.

CHANNEL DESIGN DEPTH

The project depth of the channel consists of several components. The static design draft of a level, loaded vessel is the largest dimension. That draft is 31 feet on the selected plan. Allowance for trim, squat, sinkage, and clearance between the hull and channel bottom is about 3 feet based on current records and operating procedures from the pilots. Total project depth is 34 feet.

DREDGING

Dredging to provide the selected channel improvement will involve the removal of about 218,000 cubic yards of insitu material. The dredge is to remove sand and rock from the design channel without the assistance of blasting. The bucket dredge loads the excavated material into barges for transport to the ODMDS where the material drops from the barge through the water column to the bottom.

The rock has hardness, bedding, lithology and other characteristics affecting the dredgability that vary both vertically and horizontally. Fracturing, solution activity, recrystalization and changing density have created zones of differential rock strength, which could cause some of the rock to fragment into large pieces. Removal could be difficult.

OPERATIONS AND MAINTENANCE

Maintenance of the existing Miami Harbor Federal project involves several different project depths. The harbor experiences very little shoaling with an annual rate of about 15,000 cy. Maintenance dredging has occurred only once since

1973 on the harbor project. That effort removed about 250,000 cy of shoal material in 1989. The addition of the selected channel length of 1,200 feet and width of 400 feet to the existing Federal navigation project is likely to have little impact on the average annual shoaling rate for the harbor.

REAL ESTATE REQUIREMENTS

The project requires no uplands for disposal of material. Access to the project area and ODMDS is by water. Those lands are within the navigable waters of the United States and are available to the Federal Government directly. The Port of Miami is to provide the contractor with a small staging area for his equipment and supplies. Real Estate requirements for the proposed project improvements are mainly administrative as explained in appendix C.

HISTORIC PROPERTIES

Significant historic properties may be in the Biscayne Bay-Miami Harbor vicinity. However, previous channel dredging in the area of the proposed deepening has already removed most of the sand material. Further deepening will remove mainly rock and is not likely to affect any significant historic properties. Disposal of dredged material will be in the designated ODMDS offshore from the harbor. Disposal in that area is not likely to affect significant historic properties.

Coordination of the dredging and disposal areas was with the Florida State Historic Preservation Officer (SHPO). The preparation of a no effect determination was done and consultation with the State Historic Preservation Officer was completed according to the requirements established in the National Historic Preservation Act. The SHPO provided concurrence with the Jacksonville Districts's no effect determination in a letter dated May 14, 1995. That letter to the State Clearinghouse is in appendix B. The project, as described in this document, is in compliance with the Act.

ENVIRONMENTAL CONCERNS

The proposed action was originally to have been a channel extension 400 feet wide extending 3,600 feet in length west from

the Federally authorized Lummus Island Turning Basin. The channel was to terminate in a small turning basin at the western end of the extension. Considered channel depths were 28 to 38 feet.

Coordination of the considered alternatives occurred in a scoping letter with a date of 2 March 1995. Additional coordination of the considered plans occurred with the Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act. Subsequent to this coordination modification of the considered turning basin occurred based on vessel design information. The reduction enabled the entire area to fit within the permit coverage and scope of existing NEPA documentation as well as outside marine seagrasses.

A contract with the FWS to prepare a planning aid report under the Fish and Wildlife Coordination Act resulted in a field investigation and dives on the original site. The FWS requested additional information from the United States Army Corps of Engineers to complete their report. The change in scope of the investigation resulted in a letter to the FWS on 22 February 1996 requesting them to conclude their report using available information. The FWS prepared a Coordination Act Report dated 23 April 1996 in which they stated that they had no objections to the project as proposed. That correspondence is in appendix B.

The endangered species coordination initially was for a larger scope project. Subsequent to the reduction in project scope both agencies received correspondence to re-initiated coordination. The NMFS and FWS both responded with concurrence in the Corps' determination of no effect for listed species under their jurisdiction. Copies of all correspondences are in Appendix B - Pertinent Correspondence.

COST ESTIMATES

Table 8 is a cost estimate for the selected plan. That estimate is for a channel width of 400 feet over a distance of approximately 1,200 feet to a depth of 34 feet. The estimate includes an allowable depth of one foot for dredging inaccuracies. The basis of the cost estimate has various assumptions as given in subsequent paragraphs.

TABLE 8

SELECTED PLAN ESTIMATED TOTAL FIRST COST

ITEM	COSTS
Mobilization & Demobilization	$ 434,000
Excavation	1,846,000
Berthing Area	461,000
Turbidity Monitoring	55,000
Lands and Damages	6,000
Preconstruction Engineering and Design	224,000
Construction Management	196,000
TOTAL FIRST COST	$3,221,000
Interest during construction	52,000
TOTAL ECONOMIC COST	$3,273,000

Mobilization and Demobilization. The cost includes mobilization and demobilization of dredging equipment. The inclusion is to cover the possibility that the current schedule for implementation is not possible and the current dredging equipment is no longer on site. The contractor currently dredging in the harbor has an additional work item in the contract to dredge the channel. A permit exists to dredge the channel to a depth of 36.5 feet over a width of 400 feet. The Port of Miami wants to dredge the area under the current contract and receive reimbursement for the authorized Federal share.

Navigation Aids. The United States Coast Guard (USCG) has the responsibility to provide and maintain the appropriate navigation aids for the Federal project. Existing navigation aids are considered adequate for the selected plan. No additional aids are necessary nor is it necessary to relocate any of the existing aids. The USCG currently maintains the existing navigation aids.

Disposal Site. The initial dredged material, sand and rock, goes in the designated ODMDS offshore from Miami Harbor. That offshore site is the current disposal site for material now being removed from Miami Harbor for the deepening to 42 feet.

Dredge Equipment. The cost estimate assumes the use of a dipper dredge. That dredge and the one currently dredging in the harbor are not the same piece of equipment. The use of a different dredge is to comply with the fairness in competition clause.

ECONOMIC JUSTIFICATION

Average annual equivalent benefits and costs provide the economic justification for a navigation project. The selected plan is the National Economic Development (NED) Plan which maximizes the net excess benefits over cost. Table 7 provides the economic evaluation at each depth to determine the NED plan.

Benefits. The analysis of benefits involves the existing and prospective fleet of ships that would use berths 91 and 93 with and without further deepening. The most likely future condition without improvement is for the larger ships to continue using another berth on the north side of Dodge Island. Landside equipment now moves the cargo across the port to storage areas adjacent to berths 91 and 93. The existing channel depth to those berths is now only about 24 feet. Savings in movement costs across the port with direct ship access to berths 91 and 92 have an estimated average annual equivalent (AAEQ) value of $1,077,000.

Costs. The total economic first cost is an estimated $3,273,000 for a channel depth of 34 feet. The interest and amortization of that cost over an economic project life of 50 years is an estimated $256,000 at an interest rate of 7.625 percent. That amount is the total AAEQ cost. The maintenance and operation costs are minimal for the channel and not a significant cost item. The navigation aid are part of the existing channel and required no additional cost for maintenance with the selected plan.

Benefit-to-Cost Comparison. The net difference between the AAEQ benefits and costs is about $821,000. The benefit-to-cost ratio is 4.2 to 1. The project is economically feasible for construction.

PLAN IMPLEMENTATION

To implement the selected plan for deepening the channel alongside berths 91 and 93, certain conditions and requirements are necessary for Federal participation. Areas of concern involve State and Federal requirements such as the Coastal Zone Management and Barrier Resources Acts as well as Floodplain Assessment. Discussion of those areas is the purpose of this section as well as Federal laws designating the required cost sharing for Federal participation in construction.

COASTAL ZONE MANAGEMENT ACT

The Coastal Zone Management Act of 1972, as amended (PL 92-583) requires all Federal activities inside or outside a state's coastal zone to be consistent with the state's coastal zone management plan if the activities affect natural resources, land uses, or water uses within the coastal zone. The State of Florida reviewed the sponsor's desired plan for a project to determine consistency with the State's coastal zone management plan. As a result of that determination, the State provided a dredging permit to the Port of Miami for the removal of material to deepen the channel. The permit is for dredging to a depth of 36.5 feet over a longer channel than the selected plan and includes a turning basin on the westerly end. The sponsor's permitted plan is shown on figure 2.

FLOOD PLAIN ASSESSMENT

Executive Order 11988 requires the Federal Government to avoid, to the extent possible, adverse impacts associated with the occupancy and modification of flood plains and to avoid direct or indirect support of flood plain development wherever there is a practical alternative. The Port of Miami is subject to a 100-year frequency flooding event.

Navigation improvement within the Miami Harbor area would encourage development of cargo and handling facilities. However, port development and growth is expected to occur with or without the channel improvements. Relocation of those facilities outside the flood plain is considered impractical for a port serving deep draft ships. Use or development of additional facilities at alternative ports to handle prospective future tonnages would likely involve development within the flood plain at their respective sites.

COASTAL BARRIER RESOURCES ACT

The proposed new Federal investment decision for the channel extension at Miami Harbor for berths 91 and 93 does not include any recommendations which would result in any new Federal expenditures or financial assistance prohibited by the Coastal Barrier Resources Act (Public Law 97-348); nor were funds obligated in the past years for this project for purposes prohibited by this Act.

COST SHARING

Based on the Water Resources Development Act (WRDA) of 1986, cost sharing for the selected plan is a 25 percent cash contribution upfront from the sponsor and a 10 percent contribution over time. The construction cost of the general navigation feature is the amount used to determine cost from those percentages. The general navigation feature is the channel extension for a distance of 1,200 feet to a project depth of 34 feet over a bottom width of 400 feet. The Miami Port Authority, acting as the sponsor in a project cost sharing agreement, would be responsible for both the 10 and 25 percent requirements. The 10 percent applies if the sponsor has no eligible credits from lands, easements, rights-of-way, relocations, or disposal area costs.

The total project first cost in table 9 has items and estimated costs necessary for implementation of the selected plan. Not all items in that table involve cost sharing. The berthing areas adjacent to that channel are a sponsor responsibility and not a general navigation feature for cost sharing. The study identified no relocations associated with plan implementation so there are no cost for that item in the table. Cultural resources investigations indicated no problems that would hinder implementation of the selected plan. No costs are included in the table for that item. The USCG aids to navigation already exists so the table has no cost for them.

NON-FEDERAL RESPONSIBILITIES

Public Law 99-662, the Water Resources Development Act of 1986 requires that before initiating construction of a navigation project for the harbor, the Secretary of the Army and the non-Federal sponsor shall enter into a cooperative agreement. That agreement sets the conditions for implementation of a Federal project, cost sharing, and reimbursement. The sponsor already has an executed agreement with the Department of the Army under Section 204(e) of Public Law 99-662 for construction of navigation improvements to Miami Harbor. A copy of that agreement is in appendix B. The sponsor wants to amend that agreement to include the selected plan, provided approval for construction received before current contract work is complete.

The basis for cost-sharing is in the Water Resource Development Act of 1986. The estimated cost sharing for the selected plan is in table 9. That table indicates the non-Federal share of costs for the general navigation features. Implementation of the selected plan involves specific non-Federal responsibilities. Standard non-Federal cooperation agreement items (sponsor's responsibilities) for project implementation are listed in the RECOMMENDATIONS section of this report.

TABLE 9

SELECTED PLAN COST SHARING

ITEM	TOTAL COST (000)	FEDERAL SHARE (000)	NON-FEDERAL (000)
General Navigation Features (GNF)			
Channels and turbidity monitoring; Cash	$2,106	$1,521 1/	$ 585 2/
Non-Federal cash over time adjusted	234	$ 6 3/	$ 228 4/
Preconstruction Engineering and Design	$ 187	$ 122	$ 65
Construction Management	$ 164	$ 107	$ 57
Subtotal of GNF	$2,791	$1,756	$ 935
Berthing Areas	$ 461	$ 0	$ 461
Preconstruction Engineering and Design	$ 37	$ 0	$ 37
Construction Management	$ 32	$ 0	$ 32
Subtotal of Berthing Areas	$ 530	$ 0	$ 530
TOTALS	$3,221	$1,756	$1,465

NOTES:
1/ The construction cost of general navigation features is cost shared at 65 percent Federal.
2/ The construction cost of general navigation features is cost shared at 25 percent non-Federal.
3/ The non-Federal share of the credit for land costs.
4/ The construction cost of general navigation features is cost shared at 10 percent over 30 years minus the credit for land costs ($6,000).

PUBLIC INVOLVEMENT

Appendix B contains environmental letters and other pertinent correspondence received as a result of public and interagency coordination during the study process. Coordination during the study and correspondence in that appendix indicates no problem with implementation of the selected plan.

CONCLUSIONS

The sponsor for the study and channel improvements is the Port of Miami. The study examined the sponsor's plan for deepening the existing channel south of Dodge Island from the authorized Federal turning basin to the Intracoastal Waterway. The study considered depths from 24 to 37 feet and a turning basin to similar depths on the western end of that channel. Study results indicated insufficient justification to provide the turning basin or improve the existing channel any further west than berth 93.

The selected plan is for deepening the channel along berths 91 and 93 (approximately 1,200 feet from the boundary of the authorized turning basin) to a depth of 34 feet over the existing bottom width of 400 feet. The selected plan is the National Development Plan. Construction of that plan involves the removal of an estimated 218,000 cubic yards of sand and rock without blasting to deepen the existing channel. The excavated material is to go in the designated Ocean Dredged Material Disposal Site (ODMDS). The sponsor has a contractor on site now with a dredge that is excavating rock and sand to deepen the authorized Federal project to a project depth of 42 feet. The sponsor wants to amend the executed agreement under Section 204(e) of Public Law 99-662 with the Department of the Army to include the selected plan work. To do that, the plan first needs to become an authorized project prior to dredging the channel extension in order to be eligible for Federal reimbursement.

The total estimated economic first cost for the selected plan is $3,273,000. That costs includes an allowable overdepth of 1 foot below the project depth of 34 feet. If authorization for a project occurs prior to the existing contractor finishing the job, the Port of Miami can exercise its option to include the channel extension without the expensive mobilization and demobilization cost included in the estimated first cost of the selected plan. The average annual equivalent (AAEQ) cost and benefit for the selected plan are about $256,000 and $1,077,000, respectively, at an interest rate of 7.625 percent. The benefit-to-cost ratio is about 4.2 to 1.

The sponsor under their existing contract for dredging Miami Harbor has the option to include dredging of the channel extension from the Lummus Island Turning Basin west about 3,600 feet. The sponsor is ready to proceed with that work as soon as the project extension becomes authorized for construction. The

sponsor is fully capable of initiating that work with an amendment to the executed Section 204(e) agreement for work on the existing harbor project.

RECOMMENDATIONS

I recommendation that the existing project for deep-draft navigation at Miami Harbor be modified to provide construction of a channel extension west of the Lummus Island Turning Basin in accordance with the selected plan described in this report with such modifications as in the discretion of the Commander, HQUSACE, may be advisable; at a first cost to the United States presently estimated at $1,756,000 with no additional annual operation, maintenance and replacement costs to the United States.

These recommendations are made with the provision that the exact amount of non-Federal contribution shall be determined by the Commander, HQUSACE, prior to project implementation, in accordance with the following required items of cooperation to which the non-Federal sponsor (Port of Miami) shall agree to perform prior to implementation:

a. Provide and maintain, at non-Federal expense, all project features other than those for general navigation;

b. Provide all lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas, and perform or ensure the performance of all relocations determined by the Federal Government to be necessary for the construction, operation, and maintenance of the general navigation features of the project;

c. Non-Federal interests pay during construction 10 percent of the cost of general navigation facilities for increment to depth of 20 feet.

d. Provide, during the period of construction, a cash contribution equal to 25 percent of the total cost of construction of the general navigation features assigned to commercial navigation attributable to the portion of the project which has a depth in excess of 20 feet but not in excess of 45 feet;

e. Pay with interest, over a period not to exceed 30 years following completion of the period of construction of the

project, an additional 10 percent of the total cost of construction of the general navigation features. Estimated current value of any disposal area provided by the non-Federal sponsor and the cost of relocations borne by the non-Federal sponsor, will be credited only for the amount of this requirement;

f. For so long as the project remains authorized, operate, maintain, repair, replace, and rehabilitate all project features, other than the general navigation features, in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and regulations and any specific directions prescribed by the Federal Government;

g. Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the Non-Federal Sponsor, now or hereafter, owns or controls for access to the Project for the purpose of inspection, and, if necessary after failure to perform by the Non-Federal Sponsor, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Federal Government shall operate to relieve the Non-Federal Sponsor of responsibility to meet the Non-Federal Sponsor's obligations, or to preclude the Federal Government from pursuing any other remedy at law or equity to ensure faithful performance.

h. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project and any project-related betterments, except for damages due to the fault or negligence of the United States or its contractors;

i. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project to the extent and in such detail as will properly reflect total project costs and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 CFR section 33.20;

j. Perform, or cause to be performed, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way that the Federal

Government determines to be necessary for the construction, operation, and maintenance of the general navigation features of the project, except that the Non-Federal sponsor shall not perform such investigations on lands, easements, or rights-of-way that the Federal Government determines to be subject to the navigation servitude without prior specific written direction by the Federal Government;

k. Assume complete financial responsibility, as between the Federal Government and the non-Federal sponsor, for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, or maintenance of the general navigation features of the project;

l. As between the Federal Government and the Non-Federal Sponsor, the Non-Federal Sponsor shall be considered the operator of the project for the purpose of CERCLA liability. To the maximum extent practicable, operate, maintain, repair, replace and rehabilitate the Project in a manner that will not cause liability to arise under CERCLA;

m. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR, Part 24, in acquiring lands, easements, and rights-of-way, required for construction, operation, and maintenance of the general navigation features of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act;

n. Comply with all applicable Federal and State laws and regulations, including, but not limited to, section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army;" and

o. Provide a cash contribution equal to the following percentage of total historic preservation mitigation and data recovery costs attributable to commercial navigation that are in excess of one percent of the total amount authorized to be

appropriated for commercial navigation: 25 percent of the costs attributable to dredging to a depth in excess of 20 feet but not in excess of 45 feet.

The sponsor furnishes the above assurances during the review and development of plans and specifications after the project has been authorized for construction.

In agreeing to the local assurances, the local sponsor incurs several obligations. The most prominent ones involve the responsibility for a cash contribution equal to twenty-five (25) percent of the cost for general navigation features prior to advertisement of the project for bids and the liability for cleanup costs of hazardous materials located on submerged lands of the selected plan. At this time there are no known hazardous or toxic materials located on those submerged lands or in local berthing areas.

The recommendations contained herein reflect the information available at this time and current departmental policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are transmitted to the Congress as proposals for implementation funding. However, prior to transmittal to the Congress, the sponsor, the State, interested Federal agencies, and other parties will be advised of any modifications and will be afforded the opportunity to comment further.

TERRY L. RICE
Colonel, Corps of Engineers
District Engineer

APPENDIX A

ENGINEERING

A. INTRODUCTION

1. General. The purpose of this appendix is to identify the project design parameters and to provide a construction cost estimate. The construction of the proposed improvements will be the responsibility of the Port of Miami.

B. HYDROLOGY AND HYDRAULICS

2. General. The applicable hydrology and hydraulic information is the same as presented in the October 1991 Design Memoramdum for the design of the Fishermans Channel and the Lummus Island Turning Basin. The currents and water surface elevations in Miami Harbor are subject to tidal variations, the effects of winds, drainage inflows from upland areas, and changes in barometric pressure. The greatest influence of navigation is caused by the tidal currents flowing through Government Cut. The highest currents are found during flood tide, but the currents during both ebb and flood tide present a problem to navigation.

3. Ship Simulator Study. The Waterways Experiment Station (WES) in Vicksburg, Mississippi conducted a ship simulator study for Miami Harbor, and the final report was published in April 1991.

C. GEOLOGY AND SOILS

4. General. Rock that is classified as either sandy limestone, oolitic limestone, coralline limestone, or calcareous quartz sandstone underlies the entire project area.

In most places, the bottom of Miami Harbor is covered with either loose sand or very soft silt. These unconsolidated materials often fill underlying solution cavities. The thickness of these materials ranges from less than 1 foot to more than 8 feet.

The Miami Oolite is present at or near ground surface throughout Dade County and half of Broward County. The Miami Oolite is a very permeable limestone of shallow marine origin. It contains cavities and many solution channels. A hard basal conglomerate marks the unconformable contact with the underlying Fort Thompson Formation.

The Fort Thompson Formation underlies all of South Florida. It consists of sandy (quartz) limestone, calcareous quartz sandstone, and sand seams. Although mainly of marine origin, it contains beds of freshwater limestone. Solution holes are present and may be either open or filled with sand or secondary limestone.

In the Miami area, these two formations form the unconfined, very permeable, Biscayne Aquifer which is the only source of drinking water for the residents of South Florida. The U.S. Environmental Protection Agency (EPA) has designated the Biscayne Aquifer as the *sole source aquifer*. This designation, under the Safe Drinking Water Act of 1974, requires studies to determine that Federally funded projects will not contaminate the designated aquifer.

5. Investigations Performed. In April and May of 1995, eleven core borings were drilled in the Dodge Island Channel and Turning Basin to define the character and extent of the materials to be excavated. An additional fifty wash borings were drilled to further define the top of rock. The borings were drilled with a Failings 314 Drill mounted on self-elevating drill barge *Explorer*. The borings were located using the Global Positioning System (GPS). The rock units were drilled with a diamond 4" by 5 1/2" core barrel. The standard split spoon was used to sample the unconsolidated materials. Drilling logs and Laboratory Analyses are provided with this appendix. Core boring locations are shown on Plate A-1.

6. Materials Encountered. Soft unconsolidated materials composed primarily of silt and soft clay were sampled in nine of the eleven core borings. The thickness of this layer ranged from 0 feet to 5.6 feet at the locations drilled. Below the unconsolidated material, hard and moderately hard limestones were encountered. Very hard and hard limestone and sandstone lie below the upper limestone.

7. Excavation. Historically, economic excavation of the rock in Miami Harbor has required blasting. The hardness, bedding, lithology, and other characteristics affecting the dredgeability of the rock vary both vertically and horizontally. Fracturing, solution activity, recrystallization, and varying density have created zones of differential rock strength. Either mechanical excavation and/or blasting can cause the rock described on the core boring logs to fragment into large pieces that would be difficult to remove.

The dredge *Hercules* is currently working in Miami Harbor adjacent to the study area and is removing the rock without the assistance of blasting. Therefore, blasting was not included in the construction cost estimates presented in this report.

Material from previous excavations,i.e. large boulders,etc., and debris commonly found abandoned along commercial channels,i.e. tires, ropes, cables, anchors, cement blocks,etc. are to be expected.

D. DESIGN AND CONSTRUCTION

8. General. The project design presented in this appendix is limited to that portion of the project expansion, planned by the Port of Miami (as local sponsor), which can be economically justified as a Federal project. Refer to Figure 2 in the main report for the Study Area location.

9. Project Plan. A general description of the plan of improvement recommended for authorization is presented in the main report. For cost estimating purposes, the design channel would be constructed from approximately Station 21+00, at berth 91 to Station 33+00, at the west end of berth 93. The channel would be dredged to a width of 400 feet and to a project depth of -34 feet MLW. An additional 1-foot of allowable overdepth was included in the quantities to allow for the inaccuracies in the dredging process.

10. Side Slopes. For estimating purposes, the average side slope used for the unclassified material was 1 vertical and 3 horizontal. The side slope in rock was vertical.

11. Disposal Area. The excavated material would be placed in the Ocean Dredged Material Disposal Site (ODMDS) located 3 miles offshore.

12. Surveying and Mapping. Survey data obtained from the Port of Miami was used to compute the excavation quantities for the plans presented in the construction cost estimate. No additional survey information is required.

13. Environmental Considerations. All required coordination with applicable State and Federal Agencies has been completed, and the Port of Miami has obtained the necessary permits to construct the proposed project.

E. OPERATION AND MAINTENANCE

14. General. Miami Harbor experiences very little shoaling, and the addition of the proposed channel to the existing Federal navigation project is expected to have only a minimal effect on the average annual maintenance costs.

F. COST ESTIMATES

15. General. The estimates of first cost for construction of the alternative plans were prepared using M-CACES software and are presented in Table A-1. Table A-1 includes a narrative, a summary cost, and a detailed cost showing quantity, unit cost, and the amount for contingencies for each cost item.

The cost estimates were prepared for an effective date of February 1996.

TABLE A-1
COST ESTIMATES

PROPOSED NARRATIVE FOR MCACES ESTIMATE:

MOBILIZATION COSTS:

Mobilization Costs for a separate contract have been included based on the remote possibility that the authorization does not happen in a timely manner. It is highly probable that the Dredge "Hercules", which is already on site, will perform the work.

CEDEP Parameters:

All Dredging Estimates were performed using CEDEP (Cost Engineering Dredge Estimating Program) for Mechanical Dredging. The unit costs developed contain turbidity monitoring. The Unit Cost was then transfered to MCACES. The CEDEP file is named MIF602E.WK1.

Five (5) Alternative CEDEP Estimates have been performed to determine construction costs for dredging at depths, ranging from 32'MLW to 37'MLW.

Due to the inaccuracies of the dredging process, a 1' vertical allowance for overdepth has been included in the estimated quantity of dredging.

The CEDEP estimates were performed using one 54-CY Mechanical Dredge, with a 21 cy rock bucket. Although this is not the dredge currently on site, this dredge was chosen to determine a fair and reasonable cost based on two competitive contractors. Until recently Dipper dredges have not been considered in these reports because of a lack of competition in the industry. The addition of the Dredge "Hercules" to the dredging fleet now makes possible competitive bidding for Dipper dredges. Dipper Dredges have the capability of dredging some types of rock without using blasting.

No Blasting was considered in the dredging estimates. It has been demonstrated by the Dredge "Hercules" in Miami Harbor that the rock found in the project area can be dug without blasting. A field trip to the project site to observe the Dredge "Hercules" was taken on 6 December 1995. Five representatives from Jacksonville District were in attendance: Anne Fore, Brian Blake, and Al Fletcher from EN-C, Cherie Pelletier from PD-PN, and Doug Rosen from EN-GG. It was observed that the rock in Miami Harbor, adjacent to the study area was indeed dredged without the assistance of blasting.

Contingencies:

A contingency of 20% was used for the construction estimate because it is possible that a new contract for the work will be issued.

A separate contingency of 25% was applied to Lands and Damages by CESAJ-RE.

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	QUANTITY UOM	CONTRACT	CONTING	TOTAL COST	UNIT COST
03 34' Project					
03- A Construction Cost					
03- A/12 Navigation Ports and Harbors					
03- A/12.02 Harbors					
03- A/12.02.01 Mobiliz, Demobil & Prep Work					
03- A/12.02.01/01 Dredge Mobilization & Demobil.		361,547	72,309	433,856	
TOTAL Mobiliz, Demobil & Prep Work		361,547	72,309	433,856	
03- A/12.02.15 Mechanical Dredging					
03- A/12.02.15/ 1 Excavation, Unclassified		1,968,375	393,675	2,362,050	
TOTAL Mechanical Dredging		1,968,375	393,675	2,362,050	
TOTAL Harbors		2,329,922	465,984	2,795,906	
TOTAL Navigation Ports and Harbors		2,329,922	465,984	2,795,906	
TOTAL Construction Cost		2,329,922	465,984	2,795,906	
03- B Non-Construction Cost					
03- B/01 Lands and Damages		5,000	1,000	6,000	
03- B/30 Planning, Engineering and Design		186,400	37,280	223,680	
03- B/31 Construction Management (S&I)		163,100	32,620	195,720	
TOTAL Non-Construction Cost		354,500	70,900	425,400	
TOTAL 34' Project		2,684,422	536,884	3,221,306	

GEOTECHNICAL
DRILLING LOGS
AND
LABORATORY ANALYSES

MIAMI HARBOR
DODGE ISLAND CHANNEL AND TURNING BASIN

CORE BORING NOTES

1. BORING LOCATIONS ARE SHOWN ON PLATE A-1 .

2. ELEVATIONS ARE IN FEET AND TENTHS AND REFER TO MEAN LOW WATER WHICH IS 0.8 FEET BELOW MEAN SEA LEVEL (N.G.V.D.1929).

3. BLS/FT. REFERS TO THE NUMBER OF HAMMER BLOWS REQURED TO ADVANCE A SPLIT-SPOON (1 3/8" I.D. X 2.0" O.D.) ONE-HALF FOOT. THE SPOON IS 2.0 FEET LONG AND DRIVEN CONTINIOUSLY ONE AND ONE-HALF FEET WHERE POSSIBLE.

4. (SM), (CH), ETC.,REFERS TO THE CORPS OF ENGINEERS UNIFIED SOILS CLASSIFICATION SYSTEM. MATERIALS ARE CLASSIFICATED ON THE BASIS OF VISUAL EXAMINATION AND LABORATORY ANALYSES. LABORATORY CLASSIFICATION TAKES PRECEDENCE OVER VISUAL FIELD CLASSIFICATION.

5. ROCK HARDNESS IS DEFINED BY THE FOLLOWING:
   SOFT - CAN BE SCRATCHED WITH FINGERNAIL.
   MODERATELY HARD - CAN BE SCRATCHED EASILY WITH A KNIFE. CANNOT BE SCRATCHED WITH FINGERNAIL.
   HARD - DIFFICULT TO SCRATCH WITH KNIFE.
   VERY HARD - CANNOT BE SCRATCHED WITH KNIFE.

6. D.T. 20 MIN. ETC., REFERS TO THE TIME IN MINUTES REQUIRED TO DRILL THROUGH THE VERTICAL REACHES SHOWN.

7. H.P. 50 P.S.I. ETC., REFERS TO THE HYDRAULIC PRESSURE, IN POUNDS PER SQUARE INCH, APPLIED TO THE DRILL BIT WHILE DRILLING THROUGH THE VERTICAL REACH SHOWN.

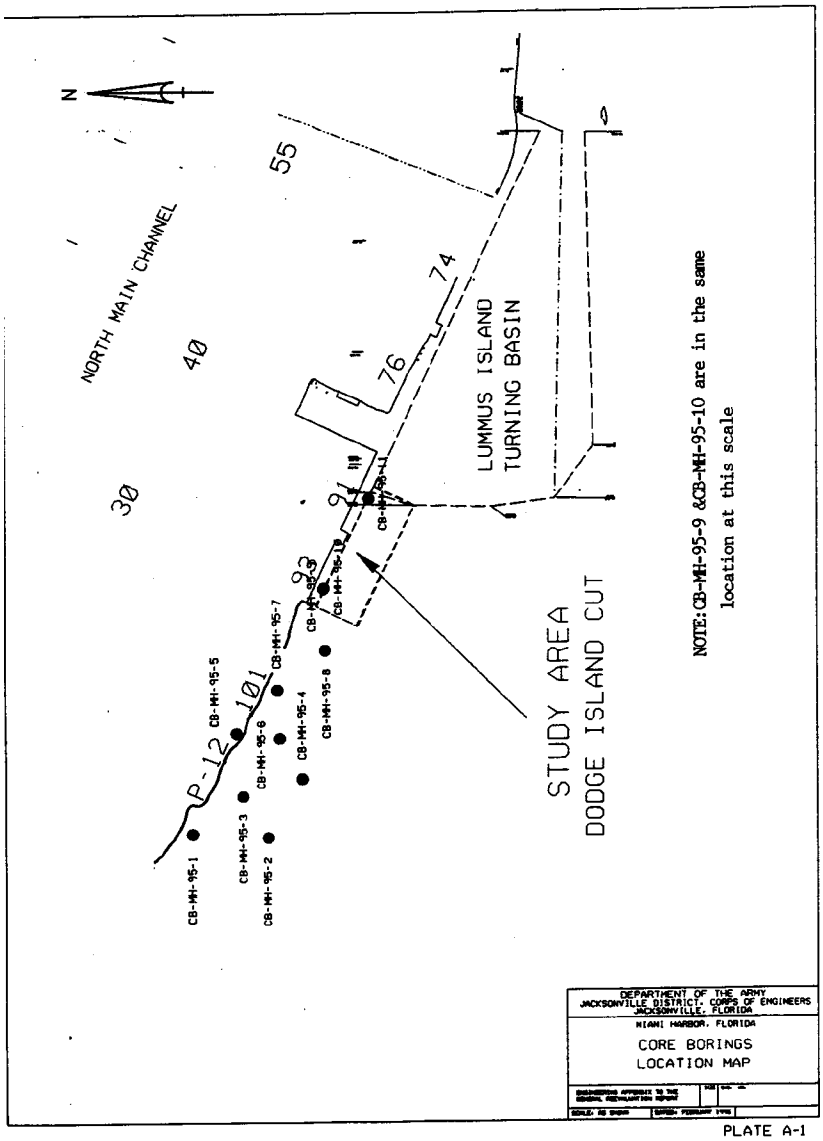
N
NORTH MAIN CHANNEL
55
40
30
74
76
91
93
101
P-12
LUMMUS ISLAND
TURNING BASIN
STUDY AREA
DODGE ISLAND CUT
CB-MH-95-1
CB-MH-95-2
CB-MH-95-3
CB-MH-95-4
CB-MH-95-5
CB-MH-95-6
CB-MH-95-7
CB-MH-95-8
NOTE: CB-MH-95-9 &CB-MH-95-10 are in the same location at this scale
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
MIAMI HARBOR, FLORIDA
CORE BORINGS
LOCATION MAP

PLATE A-1

Hole No.CB-MH-95-1

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening
2. LOCATION (Coordinates or Station): X=770,027 Y=524,555
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-1
5. NAME OF DRILLER: C. Robbins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 21.7 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED COMPLETED: 4/24/95 4/24/95
17. ELEVATION TOP OF HOLE: -21.0 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 58 %
19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-21.0	0					-21.0	
			CLAY, silty, fat, some fine quartz sand, gray (CH) Soils are field visually classified in accordance with the Unified soils Classification System 140 # Hammer with 30 inch drop used used on 2' Split Spoon (1 3/8" I.D. X 2" O.D.)		1	SETTLED SPLIT SPOON	
-25.3	4.3					-25.3	
			LIMESTONE, moderately hard, solution riddled, silt and sand (quartz) filled cavities, light gray		2	SPLIT SPOON	27
						-26.8	
					3	SPLIT SPOON	1
-28.3	7.3					-28.3	
			open cavity from -28.3 to -31.3			DROPPED SPLIT SPOON	
-31.3	10.3					-31.3	
			LIMESTONE, very hard, fossiliferious, highly pitted and vuggy with small to large vugs, moderately weathered, light gray to white, fractured and broken zones	100		DIA 4 X 5 1/2 D.T. 13 MIN H.P. 110 PSI	
						-32.4	
				24		DIA 4 X 5 1/2 D.T. 40 MIN H.P. 100 PSI	
						-36.6	
				31		DIA 4 X 5 1/2 D.T. 21 MIN H.P. 100 PSI	
						-40.5	
				63		D.T. 20 MIN H.P. 100 PSI	
						-41.3	
				100		DIA 4 X 5 1/2 D.T. 45 MIN H.P. 120 PSI	
-42.7	21.7					-42.7	

0 2 5 7.5 10 12 15 17.5 20 22

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Miami Harbor Deepening | HOLE NUMBER: CB-MH-95-1

Hole No.CB-MH-95-2

DRILLING LOG

DIVISION: South Atlantic
INSTALLATION: Jacksonville District
SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening
2. LOCATION (Coordinates or Station): X=788,893 Y=523,885
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-2
5. NAME OF DRILLER: C. Robbins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 10.9 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED COMPLETED: 4/25/95 4/25/95
17. ELEVATION TOP OF HOLE: -24.3 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 35 %
19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/6"
-24.3	.0					-24.3	
			CLAY, silty, fat, some fine quartz sand, gray (CH)		1	SETTLED SPLIT SPOON	
-28.9	4.6					-28.9	
-29.4	5.1		LIMESTONE, moderately hard, solution riddled, silt and sand (quartz) filled cavities, light gray	100	2	-29.4 SPLIT SPOON	7
				19		DIA 4 X 5 1/2 D.T. 13 MIN H.P. 110 PSI	
			LIMESTONE, moderately hard to hard, fossiliferious, highly pitted and vuggy with small to large vugs, moderately weathered, light gray to			-30.7 DIA 4 X 5 1/2 D.T. 40 MIN H.P. 100 PSI	
			badly broken from -29.4 to -30.7	0			
			fragmented from -30.7 to -31.4				
-35.2	10.9					-35.2	
			Note: Soils are field visually classified in accordance with the Unified Soils Classification.			140# Hammer with 30" drop used on 2" Splitspoon (1 3/8 I.D. X 2" O.D.)	

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Miami Harbor Deepening
HOLE NUMBER: CB-MH-95-2

Hole No.CB-MH-95-3

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening
2. LOCATION (Coordinates or Station): X=770,388 Y=524,111
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-3
5. NAME OF DRILLER: C. Robbins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 18.1 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/4/95 COMPLETED 5/4/95
17. ELEVATION TOP OF HOLE: -26.7 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 88 %
19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel
-26.7	0					-26.7
			LIMESTONE, very hard fossiliferious, broken, moderately weathered, and vuggy gray to light gray	100		DIA 4 X 5 1/2 D.T. 28 MIN H.P. 80 PSI
						-29.7
				100		DIA 4 X 5 1/2 D.T. 18 MIN H.P. 80 PSI
						-31.7
				100		DIA 4 X 5 1/2 D.T. 15 MIN H.P. 80 PSI
						-34.7
				48		DIA 4 X 5 1/2 D.T. 10 MIN H.P. 80 PSI
						-38.8
				100		DIA 4 X 5 1/2 D.T. 16 MIN H.P. 100 PSI
						-41.9
				100		D.T. 19 MIN H.P. 110
-42.8	18.1					-42.8

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Miami Harbor Deepening | HOLE NUMBER: CB-MH-95-3

Hole No.CB-MH-95-4

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening	10. SIZE AND TYPE OF BIT: See Remarks
2. LOCATION (Coordinates or Station): X=770,518 Y=523,584	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
3. DRILLING AGENCY: Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-4	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
5. NAME OF DRILLER: C. Robbins	14. TOTAL NUMBER OF CORE BOXES: 2
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED	15. ELEVATION GROUND WATER: Tidal
7. THICKNESS OF BURDEN: 0 Ft.	16. DATE HOLE STARTED: 5/3/95 COMPLETED: 5/3/95
8. DEPTH DRILLED INTO ROCK: 0 Ft.	17. ELEVATION TOP OF HOLE: -23.7 Ft.
9. TOTAL DEPTH OF HOLE: 19.7 Ft.	18. TOTAL CORE RECOVERY FOR BORING: 88 %
	19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-23.7	0					-23.7	0
			CLAY, silty, fat, trace fine sand and small shell fragments, gray (CH) Soils field visually classified in accordance with the Unified Soils Classification System 140 # Hammer with 30 inch drop used on 2' Split Spoon (1 3/8" I.D. X 2' O.D.)		1	SETTLED SPLIT SPOON	2.5
-28.4	4.7					-28.4	5
			LIMESTONE, moderately hard, fossiliferous, moderately to highly weathered, highly pitted and vuggy with small to large vugs, badly broken, some silt and clay, light gray to white	100		DIA 4 X 5 1/2 D.T. 21 MIN H.P. 80 PSI	
						-29.9	
				100		DIA 4 X 5 1/2 D.T. 12 MIN H.P. 100 PSI	7.5
						-31.8	
				59		DIA 4 X 5 1/2 D.T. 25 MIN H.P. 100 PSI	10
						-34.0	
-35.4	11.7					DIA 4 X 5 1/2 D.T. H.P. 100 PSI	
			LIMESTONE, very hard, moderately weathered, moderately vuggy, fragmented and broken zones, gray	42			12.5
						-37.8	
				100		DIA 4 X 5 1/2 D.T. 16 MIN H.P. 80	15
						-39.4	
				100		DIA 4 X 5 1/2 D.T. 27 MIN H.P. 80	17.5
						-41.7	
				100		DIA 4 X 5 1/2 D.T. 10 MIN H.P. 80	
-43.4	19.7					-43.4	20
			SAMPLE -23.7/-28.4 LABORATORY (SM)* NOTE: *Visual classification based on grain size curve No Atterberg Limits.				22.5

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Hole No.CB-MH-95-5

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening	10. SIZE AND TYPE OF BIT: See Remarks
2. LOCATION (Coordinates or Station): X=770,938 Y=524,170	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
3. DRILLING AGENCY: Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-5	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
5. NAME OF DRILLER: C. Robbins	14. TOTAL NUMBER OF CORE BOXES: 2
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED	15. ELEVATION GROUND WATER: Tidal
7. THICKNESS OF BURDEN: 0 Ft.	16. DATE HOLE STARTED: 5/5/95 COMPLETED: 5/5/95
8. DEPTH DRILLED INTO ROCK: 0 Ft.	17. ELEVATION TOP OF HOLE: -25.2 Ft.
9. TOTAL DEPTH OF HOLE: 17.8 Ft.	18. TOTAL CORE RECOVERY FOR BORING: 81 %
	19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1"
-25.2	.0					-25.2	0
			CLAY, silty, fat, trace fine sand , gray (CH) Soils are field visually classified in accordance with the Unified Soils Classification System 140 # Hammer with 30 inch drop used on 2' Split Spoon (1 3/8" I.D. X 2" O.D.)		1	SETTLED SPLIT SPOON	2.5
-29.5	4.3					-.3.5	
			LIMESTONE, hard, fossiliferous, moderately to highly weathered highly pitted and vuggy with small to large vugs, badly broken and fragmented, light gray to white	100		DIA 4 X 5 1/2 D.T. 13 MIN H.P. 100 PSI	5
						-31.4	
				52		DIA 4 X 5 1/2 D.T. 10 MIN H.P. 100 PSI	7.5
-34.0	8.8		Cavity				10
-36.4	11.2					-36.4	
			LIMESTONE, very hard, slightly to moderately weathered, moderately to highly pitted and vuggy, light gray to white	100		DIA 4 X 5 1/2 D.T. 21 H.P. 100 PSI	12.5
						-39.4	
				100		DIA 4 X 5 1/2 D.T. 33 MIN H.P. 80	15
-43.0	17.8					-43.0	17.5
			SAMPLE -25.2/-29.5 LABORATORY (ML)* NOTE: *Visual classification based on grain size curve No Atterberg Limits.				20
							22.5

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PROJECT: Miami Harbor Deepening | HOLE NUMBER: CB-MH-95-5

Hole No.CB-MH-95-6

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening	10. SIZE AND TYPE OF BIT: See Remarks
2. LOCATION (Coordinates or Station): X=770,887 Y=523,782	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
3. DRILLING AGENCY: Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-6	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
5. NAME OF DRILLER: C. Robbins	14. TOTAL NUMBER OF CORE BOXES: 1
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED	15. ELEVATION GROUND WATER: Tidal
7. THICKNESS OF BURDEN: 0 Ft.	16. DATE HOLE STARTED: 5/7/95 COMPLETED: 5/7/95
8. DEPTH DRILLED INTO ROCK: 0 Ft.	17. ELEVATION TOP OF HOLE: -28.7 Ft.
9. TOTAL DEPTH OF HOLE: 14.4 Ft.	18. TOTAL CORE RECOVERY FOR BORING: 57 %
	19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-28.7	0					-28.7	
			CLAY, silty, fat, some fine quartz sand, gray (CH) Soils are field visually classified in accordance with the Unified Soils Classification System 140 # Hammer with 30 inch drop used on 2' Split Spoon (1 3/8" I.D. X 2" O.D.)		1	SETTLED SPLIT SPOON	
-31.8	3.1					-31.8	
			LIMESTONE, hard, fossiliferious, highly pitted and vuggy with small to large vugs, moderately to highly weathered, badly broken zones, light gray to white from -38.1 to -38.7 very hard, slightly to moderately weathered, slightly to moderately pitted, moderately vuggy with small to large vugs	42		DIA 4 X 5 1/2 D.T. 24 MIN H.P. 80	
						-35.4	
				41		DIA 4 X 5 1/2 D.T. 10 MIN H.P. 80 PSI	
						-37.6	
-38.7	10.0					DIA 4 X 5 1/2 D.T. 14 MIN H.P. 100 PSI	
			SANDSTONE, very hard, fine grained, some fossils, slightly to moderately weathered, highly vuggy with large to small vugs, badly broken, gray	56			
-41.0	12.3					-41.0	
			LIMESTONE, very hard, highly porous, pitted and vuggy, with small to large vugs, moderately weathered, fossiliferious, light gray to gray	100		DIA 4 X 5 1/2 D.T. 12 MIN H.P. 100	
-43.1	14.4					-43.1	
			from -41.9 to -42.5, hard, highly weathered, badly broken			140 # Hammer with 30 " drop used on 2' Split Spoon (1 3/8" I.D. X 2"O.D.)	
			Soils are field visually classified in accordance with the Unified Soils Classification System SAMPLE ELEVATION -28.7/-31.8 — LABORATORY ANALYSIS (SM)* NOTE: *Visual classification on grain size curve No Atterberg Limits.				

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. MAR 71

PROJECT: Miami Harbor Deepening | HOLE NUMBER: CB-MH-95-6

Hole No.CB-MH-95-7

DRILLING LOG

DIVISION: South Atlantic
INSTALLATION: Jacksonville District
SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening
2. LOCATION (Coordinates or Station): X=771,323 Y=523,803
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-7
5. NAME OF DRILLER: C. Robbins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 18.2 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 2
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 5/7/95 COMPLETED: 5/7/95
17. ELEVATION TOP OF HOLE: -25.4 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 58 %
19. SIGNATURE OF GEOLOGIST: J. Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/ft
-25.4	0					-25.4	
			CLAY, silty, fat, some fine quartz sand, gray (CH)		1	SETTLED SPLIT SPOON	
-29.2	3.8		LIMESTONE, hard, fossiliferous, highly weathered, highly pitted and vuggy with small to large vugs, badly broken, gray			-29.2	
-29.8	4.4		CLAY, fat, some limestone fragments, greenish gray (CH)			DIA 4 X 5 1/2 D.T. 7 MIN H.P. 80 PSI	
-31.0	5.6		LIMESTONE, very hard, fossiliferous, moderately weathered, slightly pitted, a few small to large vugs, gray	37			
			from -34.0 to -34.2 fragmented			-34.0	
			from -34.6 to -34.8 moderately to highly weathered, moderately hard, badly broken, low angle breaks	100		DIA 4 X 5 1/2 D.T. 8 MIN H.P. 80 PSI	
-35.7	10.3					-35.7	
-35.9	10.5		SANDSTONE, very hard, fine grained, some fossils, highly vuggy with small to large vugs, moderately weathered, gray from -35.7 to -35.9			DIA 4 X 5 1/2 D.T. 17 MIN H.P. 100 PSI	
			LIMESTONE, very hard, some fine quartz sand, moderately weathered, fossiliferous, moderately to highly pitted and vuggy with small to large vugs, gray	81			
			from -38.1 to -38.9 light gray to white, low angle breaks			-40.9	
			from -40.9 to -43.6 light gray to gray, moderately to highly weathered, highly pitted and vuggy with large to small vugs, some light yellow coating inside vugs, low angle breaks	58		DIA 4 X 5 1/2 D.T. 10 MIN H.P. 100 PSI	
-43.6	18.2					-43.6	
			Soils field visually classificated in accordance with the Unified Soils Classification System SAMPLE -25.4/-27.2 LABORATORY (SM)*			140 # Hammer with 30" drop used on 2" Split Spoon (1 3/8" I.D. x 2" O.D.)	
			NOTE: *Visual classification based on grain size curve No Atterberg Limits.				

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

END FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. NAA 71

PROJECT: Miami Harbor Deepening | HOLE NUMBER: CB-MH-95-7

Hole No.CB-MH-95-8

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening
2. LOCATION (Coordinates or Station): X=771,875 Y=523,377
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-MH-85-8
5. NAME OF DRILLER: C. Robbins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 20.8 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 2
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 4/28/95 COMPLETED: 4/28/95
17. ELEVATION TOP OF HOLE: -22.8 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 70 %
19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC *	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/ft
-22.8	0					-22.8	
			CLAY, silty, fat, trace fine sand & small shell fragments, gray (CH) Soils are field visually classified in accordance with the Unified soils Classification System 140 # Hammer with 30 inch drop used on 2" Split Spoon (1 3/8" I.D. X 2" O.D.)		1	SETTLED SPLIT SPOON	
-28.1	5.5					-28.1	
			LIMESTONE, moderately hard, solution riddled, silt and sand (quartz) filled cavities, gray to white		2	SPLIT SPOON	12
						-29.6	
					3	SPLIT SPOON	23
-31.1	8.5					-31.1	
			LIMESTONE, hard, fossiliferous, highly pitted and vuggy with small to large vugs, moderately to highly weathered, fractured and broken zones, gray to white	70		DIA 4 X 5 1/2 D.T. 21 MIN H.P. 40 PSI	
						-32.8	
				100		D.T. 15 MIN H.P. 100 PSI	
						-33.9	
				100		D.T. 13 MIN H.P. 40 PSI	
						-34.9	
				87		D.T. 18 MIN H.P. 40 PSI	
						-36.7	
				100		-37.4 D.T. 17 MIN H.P. 80 PSI	
			SAMPLE ELEVATION -22.6/-28.1 LABORATORY ANALYSIS [ML]* NOTE: *Visual classification based on grain size curve No Atterberg Limits	71		DIA 4 X 5 1/2 D.T. 18 MIN H.P. 80 PSI	
						-40.9	
				80		DIA 4 X 5 1/2 D.T. 15 MIN H.P. 100 PSI	
-43.4	20.8					-43.4	

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. PAGE 1/1

PROJECT: Miami Harbor Deepening | HOLE NUMBER: CB-MH-95-8

Hole No.CB-MH-95-9

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening
2. LOCATION (Coordinates or Station): X=772,229 Y=523,386
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-9
5. NAME OF DRILLER: C. Robbins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 18.8 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 2
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 5/8/95 COMPLETED: 5/8/95
17. ELEVATION TOP OF HOLE: -26.9 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 76 %
19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-26.9	0					-26.9	
			CLAY, silty, fat, some fine quartz sand, trace limestone gravel, gray (CH)		1	SPLIT SPOON — SETTLED	
-28.4	1.5					-28.4	
			LIMESTONE, moderately hard, highly weathered, highly pitted and vuggy, with small to large vugs, badly broken, silty, gray to white	89		DIA 4 X 5 1/2 D.T. 15 MIN H.P. 100	
						-32.1	
				100		DIA 4 X 5 1/2 D.T. 15 MIN H.P. 80 PSI	
						-34.7	
-36.1	9.2					DIA 4 X 5 1/2 D.T. 27 MIN H.P. 80 PSI	
			LIMESTONE, very hard, fossiliferious, highly pitted and vuggy with small to large vugs, moderately weathered, light gray to white, fractured and broken zones	55			
-39.0	12.1					-39.0	
			SANDSTONE, moderately hard, highly weathered, highly porous, pitted and vuggy with small and large vugs, gray broken zones and low angle breaks	50		DIA 4 X 5 1/2 D.T. 3 MIN H.P. 80 PSI	
						-42.1	
-43.7	16.8					DIA 4 X 5 1/2 D.T. 5 MIN H.P. 80 PSI	
						-43.7	
			Soils are field visually classified in accordance with the Unified Soils Classification System 140 # Hammer with 30" drop used on 2' Split Spoon (1 3/2" I.D. x 2" O.D.)				

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT: Miami Harbor Deepening | HOLE NUMBER: CB-MH-95-9

Hole No.CB-MH-95-10

DRILLING LOG

DIVISION: South Atlantic
INSTALLATION: Jacksonville District
SHEET 1 OF 1

1. PROJECT: Miami Harbor Deepening
2. LOCATION (Coordinates or Station): X=772,221 Y=523,381
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-10
5. NAME OF DRILLER: C. Robbins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 15.3 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 2
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 5/8/95 COMPLETED: 5/8/95
17. ELEVATION TOP OF HOLE: -28.0 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 95 %
19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC. %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/ 6"
-28.0	0					-28.0	0
-29.0	1.0		CLAY, silty, fat, trace fine quartz sand, gray (CH)		1	SPLIT SPOON SETTLED -29.0	
			LIMESTONE, hard, highly weathered, highly pitted and vuggy, with small to large vugs, badly broken, silty, gray to white	100		DIA 4 X 5 1/2 D.T. 12 MIN H.P. 100 -31.2	2.5
				100		DIA 4 X 5 1/2 D.T. 33 MIN H.P. 100 PSI -34.0	5
			LIMESTONE, very hard, fossiliferious, highly pitted and vuggy with small to large vugs, moderately to highly weathered, badly broken, light gray to white	72		DIA 4 X 5 1/2 D.T. 28 MIN H.P. 80 PSI -36.5	7.5
			from -37.1 to -38.8 low angle breaks	100		DIA 4 X 5 1/2 D.T. 34 MIN H.P. 80 PSI -40.3	10
-41.3	13.3		SANDSTONE, moderately hard, highly weathered, highly porous, pitted and vuggy with small and large vugs, some fossils, fine to medium grained, light gray to gray	100		DIA 4 X 5 1/2 D.T. 6 MIN H.P. 80 PSI	12.5
-41.8	13.9						
-43.3	15.3		LIMESTONE, very hard, moderately weathered, some fossils, highly porous, pitted with small to large vugs, light gray to gray			-43.3	15
			from -40.9 to -42.5 low angle breaks				17.5
			Soils are field visually classified in accordance with the Unified Soils Classification System				20
			SAMPLE -28.0/-29.0 LABORATORY (ML)*				22.5
			NOTE:*Visual classification based on grain size curve No Atterberg Limits				

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Miami Harbor Deepening
HOLE NUMBER: CB-MH-95-10

Hole No.CB-MH-95-11

DRILLING LOG | DIVISION South Atlantic | INSTALLATION Jacksonville District | SHEET 1 OF 1

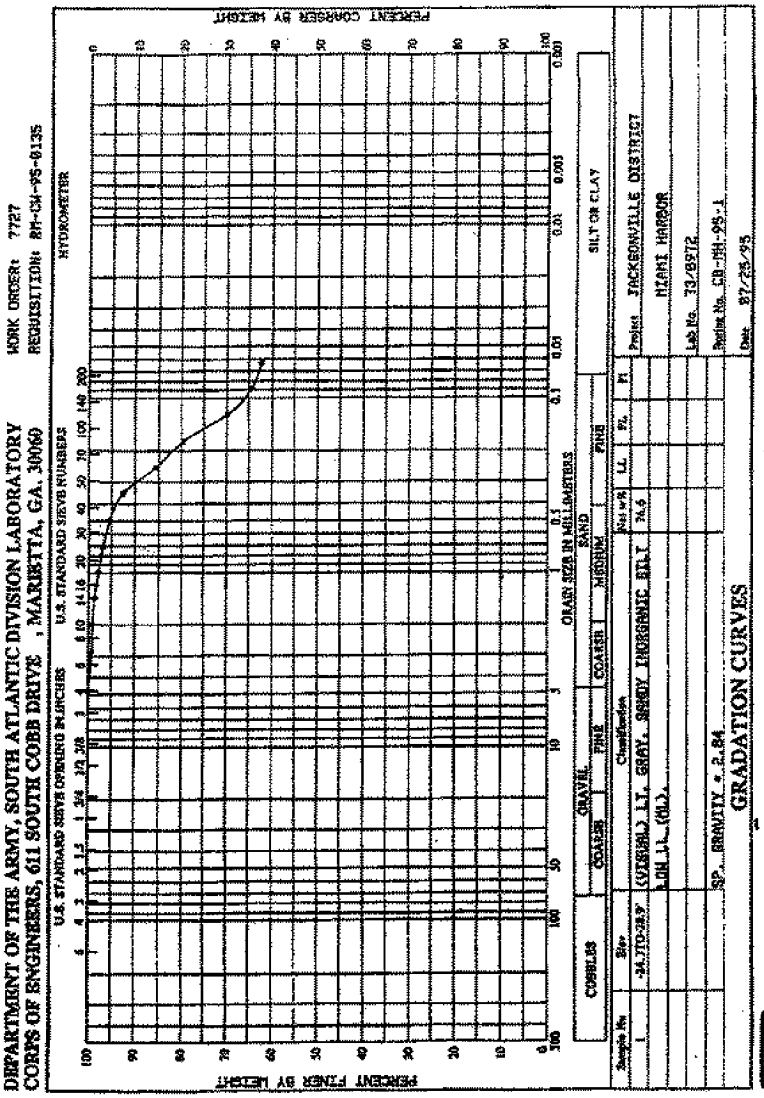
1. PROJECT: Miami Harbor Deepening
2. LOCATION (Coordinates or Station): X=773,035 Y=522,983
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-MH-95-11
5. NAME OF DRILLER: C. Robbins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 16.1 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 314
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 / disturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 2
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 5/8/95 COMPLETED: 5/8/95
17. ELEVATION TOP OF HOLE: -27.3 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 85 %
19. SIGNATURE OF GEOLOGIST: J.Aurthur

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel
-27.3	0					-27.3
			LIMESTONE, hard, fossiliferious, highly pitted and vuggy with small to large vugs, moderately weathered, light gray to white, fractured and broken zones	41		DIA 4 X 5 1/2 D.T. 15 MIN H.P. 100
						-31.4
				100		DIA 4 X 5 1/2 D.T. 15 MIN H.P. 80 PSI
			from -34.6 to -36.0 very hard			-36.0
				82		DIA 4 X 5 1/2 D.T. 27 MIN H.P. 80 PSI
						-39.7
				100		DIA 4 X 5 1/2 D.T. 3 MIN H.P. 80 PSI
-43.4	16.1					-43.4

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

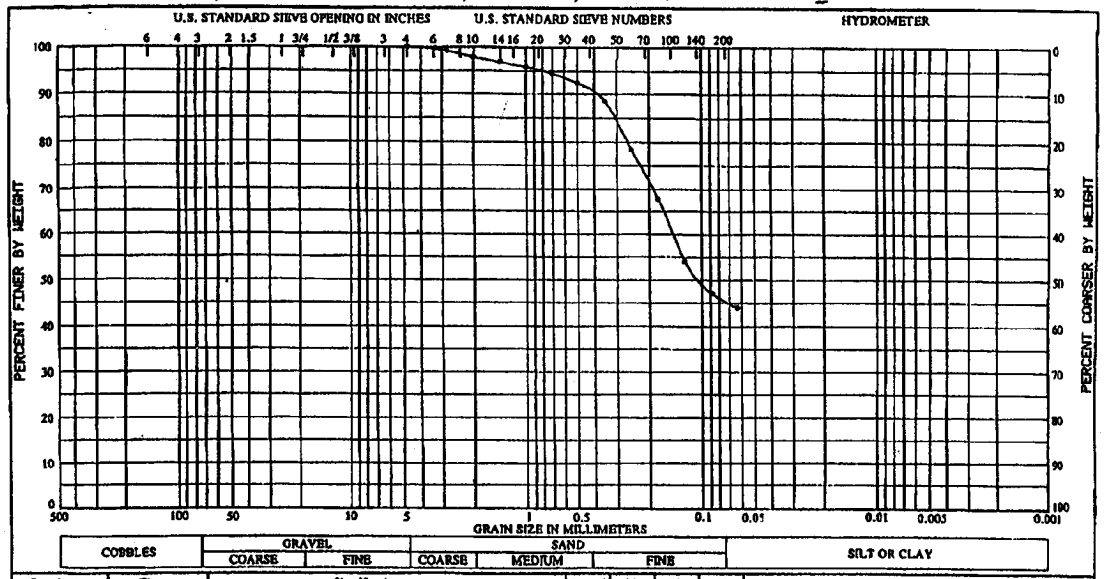
ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Miami Harbor Deepening | HOLE NUMBER: CB-MH-95-11


DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060
WORK ORDER: 7727
REQUISITION: RF-CM-95-0135
HYDROMETER
U.S. STANDARD SIEVE NUMBERS
U.S. STANDARD SIEVE OPENING IN INCHES
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE IN MILLIMETERS
COBBLES
GRAVEL
SAND
SILT OR CLAY
Sample No.
Symbol
Classification
Nat w%
LL
PL
PI
Project JACKSONVILLE DISTRICT
MIAMI HARBOR
Lab No. 73/0972
Proline No. CB-MH-95-1
Date 87-25-95
GRADATION CURVES

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7727
REQUISITION: RM-CW-95-0135



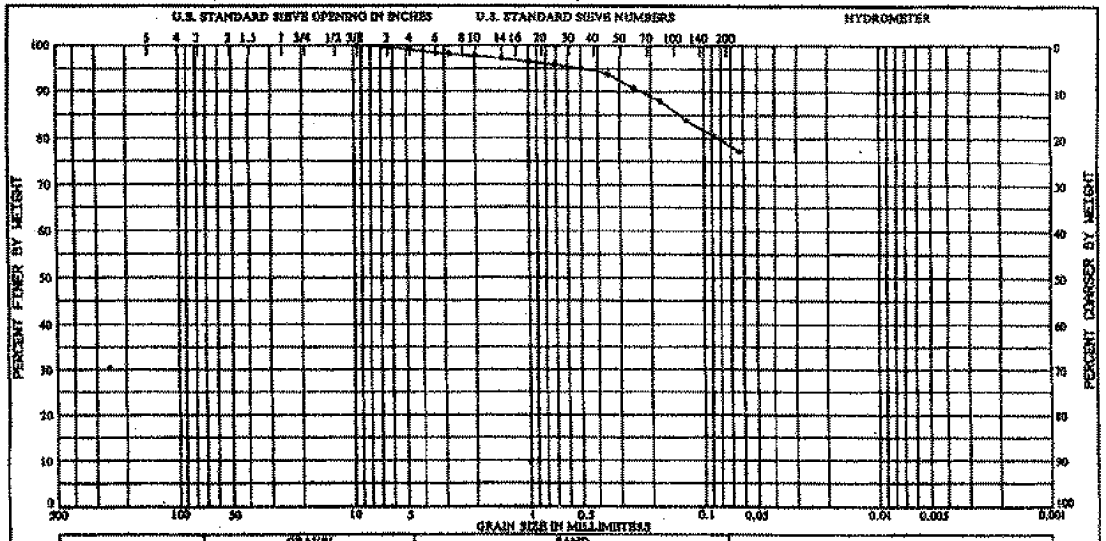
Sample No	Elev	Classification	Nat w%	LL	PL	PI
1	-23.7TO-28.4'	(VISUAL) LT. GRAY, SILTY SAND (SM),	67.2			
		PLASTIC FINES.				
		SP. GRAVITY = 2.66				

GRADATION CURVES

Project: JACKSONVILLE DISTRICT
MIAMI HARBOR
Lab No. 73/8973
Boring No. CB-MH-95-4
Date 07/25/95

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7727
REQUISITION: RM-CW-96-0135



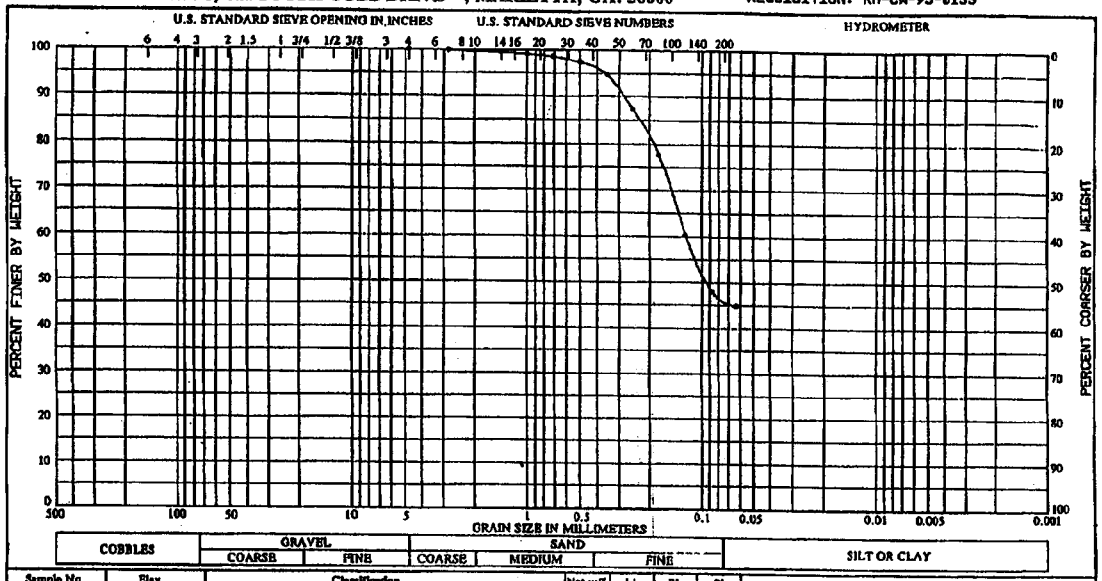
Sample No	Elev	Classification	Nat w%	LL	PL	PI
1	-25.1TO-28.5	(VISUAL) LT. GRAY, INORGANIC SILT LOW LL (ML), WITH SOME SAND SIZES AND A TRACE OF GRAVEL SIZES.	60.7			
		SP. GRAVITY = 2.67				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
MIAMI HARBOR
Lab No. 72/6974
Boring No. CB-IH-95-5
Date 07/24/95

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7727
REQUISITION: RM-CW-95-0135



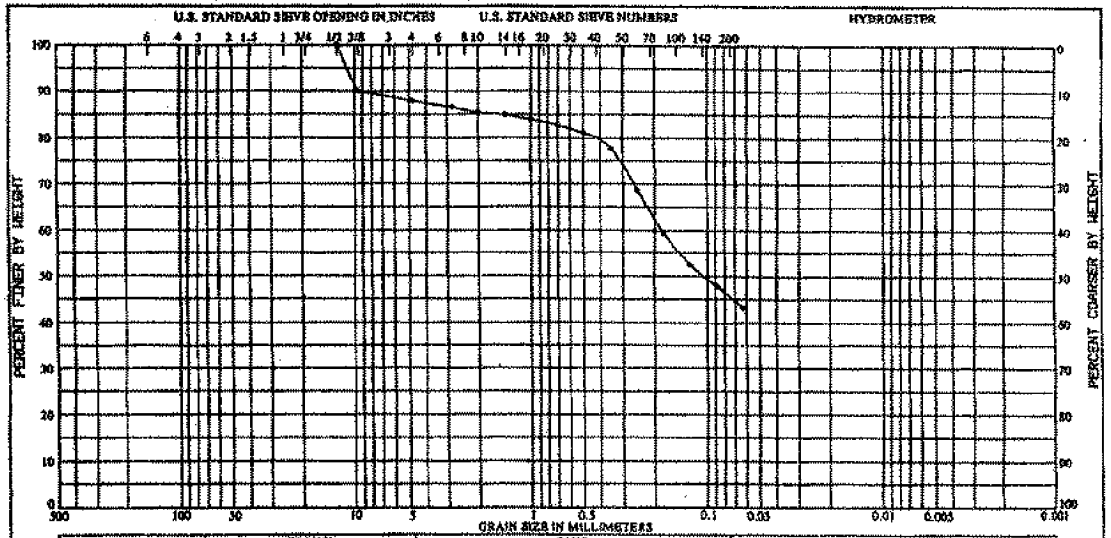
Sample No	Elev	Classification	Nat w%	LL	PL	PI
1	-28.7TO-31.8'	(VISUAL) LT. GRAY, SILTY SAND (SM), WITH	55.2			
		PLASTIC FINES.				
		SP. GRAVITY = 2.65				

GRADATION CURVES

Project: JACKSONVILLE DISTRICT
MIAMI HARBOR
Lab No. 73/6975
Boring No. CB-MH-95-6
Date 07/24/95

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

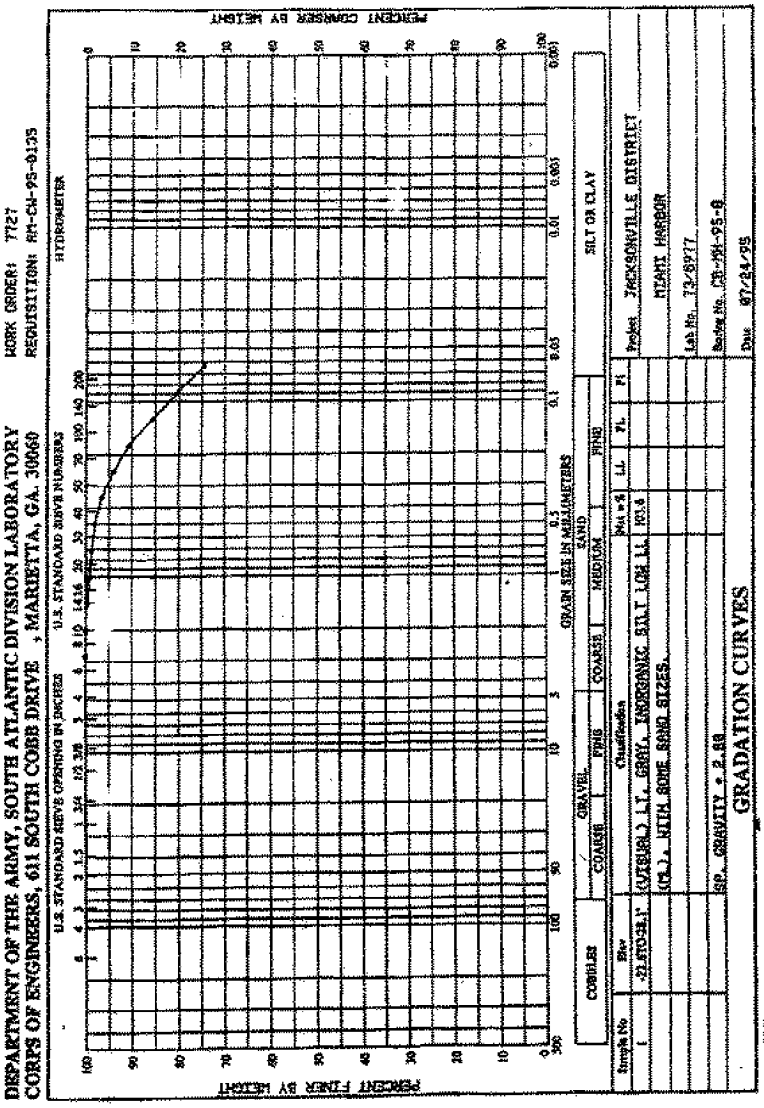
WORK ORDER: 7727
REQUISITION: RN-CH-95-0138



Sample No	Elev	Classification	Nat w%	LL	PL	PI
1	-25.4TO-29.3'	(VISUAL) LT. GRAY, SILTY SAND (SM), WITH PLASTIC FINES AND A LITTLE GRAVEL SIZED.	68.1			
		SP. GRAVITY = 2.82				

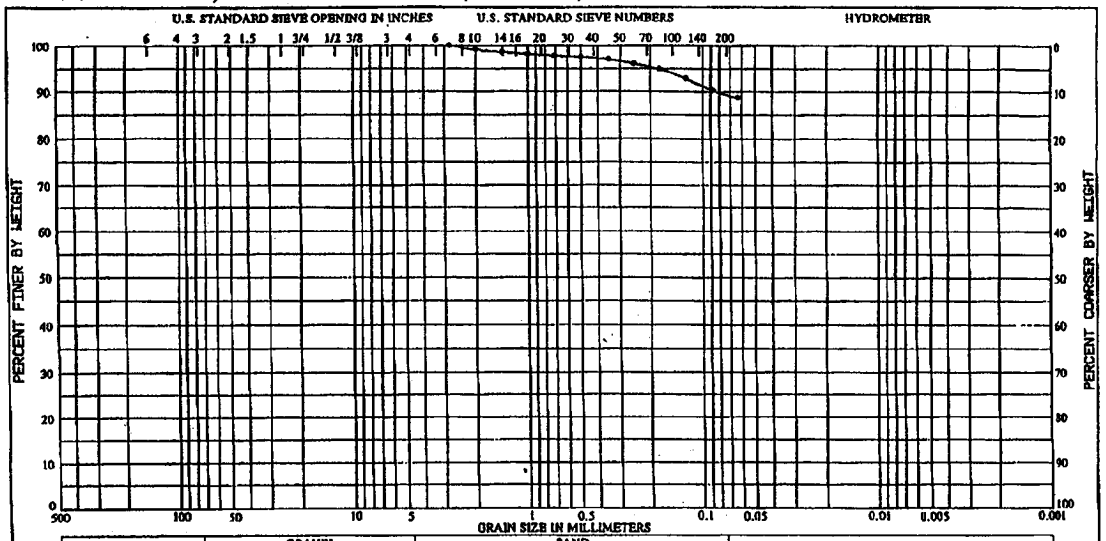
Project JACKSONVILLE DISTRICT
MIAMI HARBOR
Lab No. 73/8976
Boring No. CB-MH-95-7
Date 07/24/95

GRADATION CURVES


DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060
WORK ORDER: 7727
REQUISITION: AM-CH-95-0135
HYDROMETER
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE IN MILLIMETERS
COBBLES
GRAVEL
COARSE
FINE
SAND
COARSE
MEDIUM
FINE
SILT OR CLAY
Sample No.
Elev.
Classification
Nat. w %
LL.
PL.
PI.
Project JACKSONVILLE DISTRICT
MIAMI HARBOR
Lab No. 73-0977
Boring No. CB-MH-95-8
Sp. GRAVITY = 2.68
Date 07-24-95
GRADATION CURVES

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7727
REQUISITION: RM-CW-95-0135



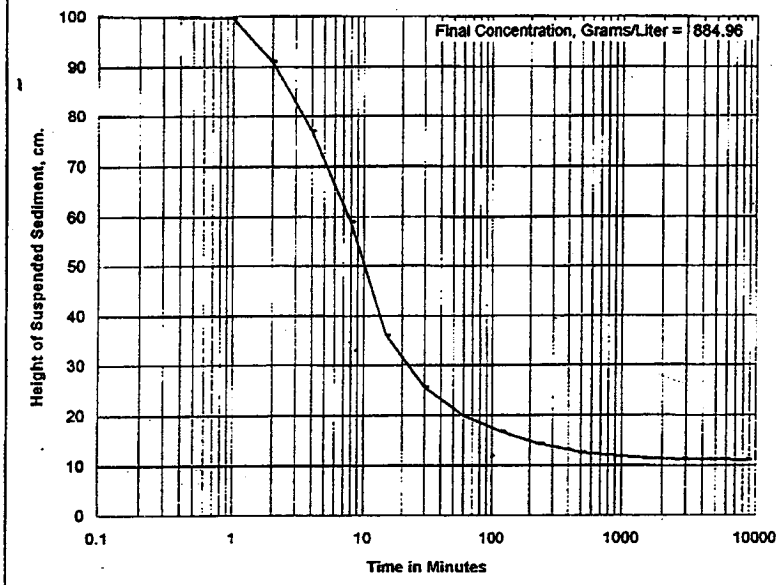
Sample No	Elev	Classification	Nat w%	LL	PL	PI
1	-28.0TO-29.0'	(VISUAL) LT. GRAY, INORGANIC SILT LOW LL	88.8			
		(ML). WITH A LITTLE SAND SIZES.				
		SP. GRAVITY = 2.68				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
MIAMI HARBOR
Lab No. 73/8978
Boring No. CB-MH-95-10
Date 07/24/95

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

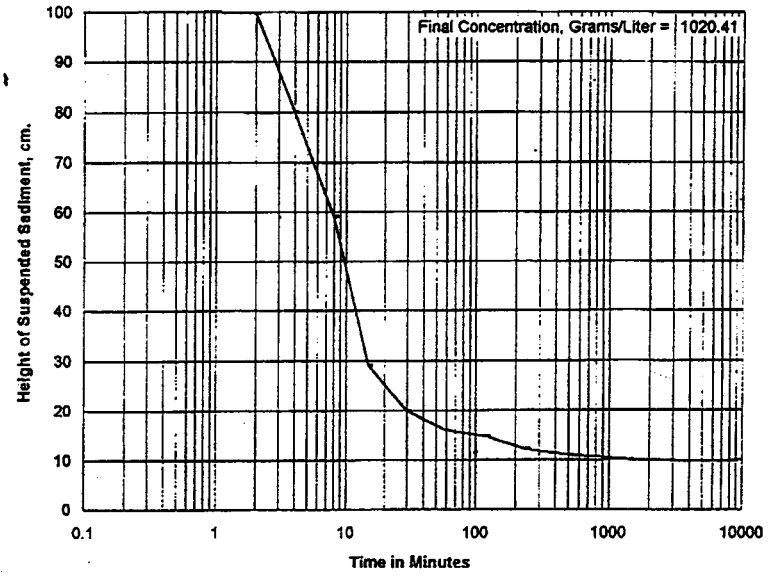


NOTES:
1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 56.62

PROJECT	JACKSONVILLE DISTRICT MIAMI HARBOR	REQ'N NO.	RM-CW-95-0135
		W.O. NO.	7727
AREA		DATE RECEIVED	5 JULY, 1995
		DATE REPORTED	25-Jul-95
BORING NO.	CB-MH-95-1	ELEVATION	-24.3 TO -28.9'
SAMPLE NO.	1	LAB NO.	73/6972

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

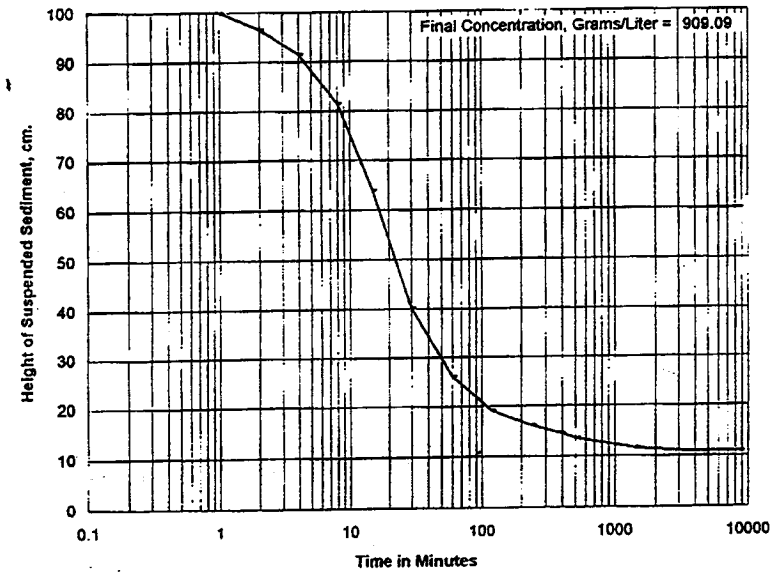


NOTES: 1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 59.82

PROJECT	JACKSONVILLE DISTRICT MIAMI HARBOR	REQ'N NO.	RM-CW-95-0135
		W.O. NO.	7727
AREA		DATE RECEIVED	5 JULY, 1995
		DATE REPORTED	25-Jul-95
BORING NO.	CB-MH-95-4	ELEVATION	-23.7 TO -28.4'
SAMPLE NO.	1	LAB NO.	73/6973

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

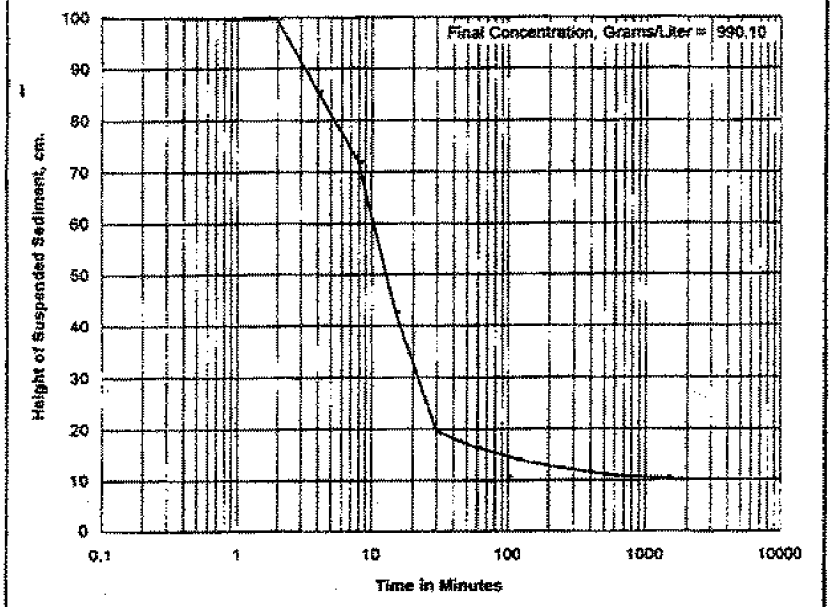


NOTES: 1. Test specimens (100 grams/ liter ,moist weight of specimen) suspende[illegible] sea water(salinity about 11 ppT) in 100 cm. long bottom w[illegible]awal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 62.23

PROJECT	JACKSONVILLE DISTRICT MIAMI HARBOR	REQ'N NO.	RM-CW-95-0135
		W.O. NO.	7727
AREA		DATE RECEIVED	5 JULY, 1995
		DATE REPORTED	25-Jul-95
BORING NO.	CB-MH-95-5	ELEVATION	-25.2 TO -29.5'
SAMPLE NO.	1	LAB NO.	73/6974

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

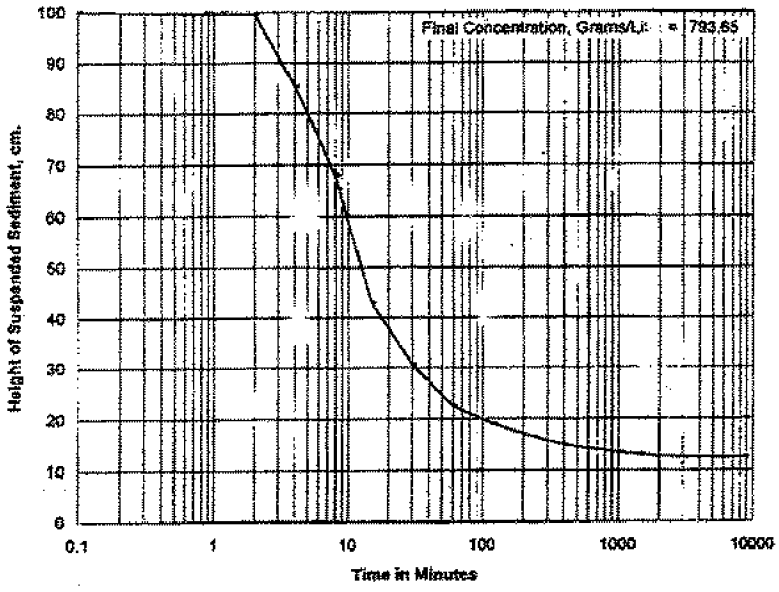


NOTES: 1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 64.43

PROJECT	JACKSONVILLE DISTRICT MIAMI HARBOR	REQ'N NO.	RM-CW-95-0135
		W.O. NO.	7727
AREA		DATE RECEIVED	5 JULY, 1995
		DATE REPORTED	25-Jul-95
BORING NO.	CS-M1-95-6	ELEVATION	-28.7 TO -31.5'
SAMPLE NO.	1	LAB NO.	73/6975

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

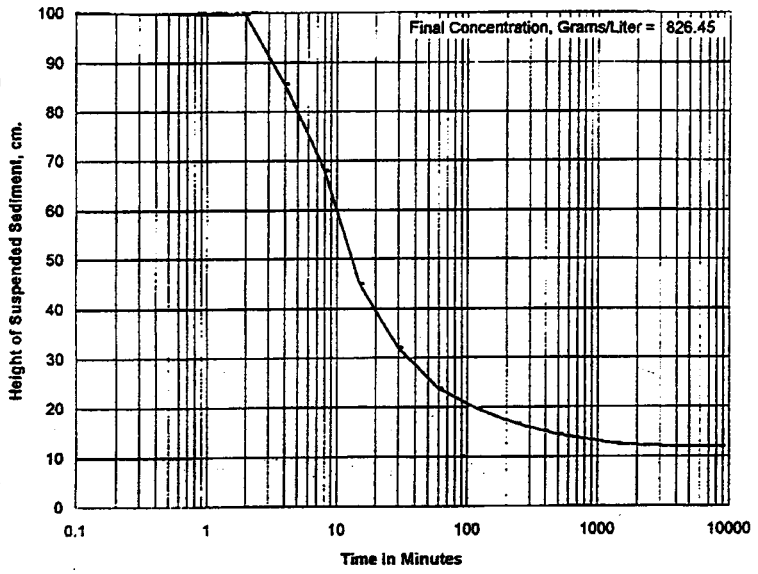


NOTES: 1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 59.49

PROJECT	JACKSONVILLE DISTRICT MIAMI HAR	FIELD NO.	RM-CW-95-0135
		W.O. NO.	7727
AREA		DATE RECEIVED	5 JULY, 1995
		DATE REPORTED	25-Jul-95
BORING NO.	CB-MH-95-7	ELEVATION	-25.4 TO -29.2'
SAMPLE NO.	1	LAB NO.	73/6978

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

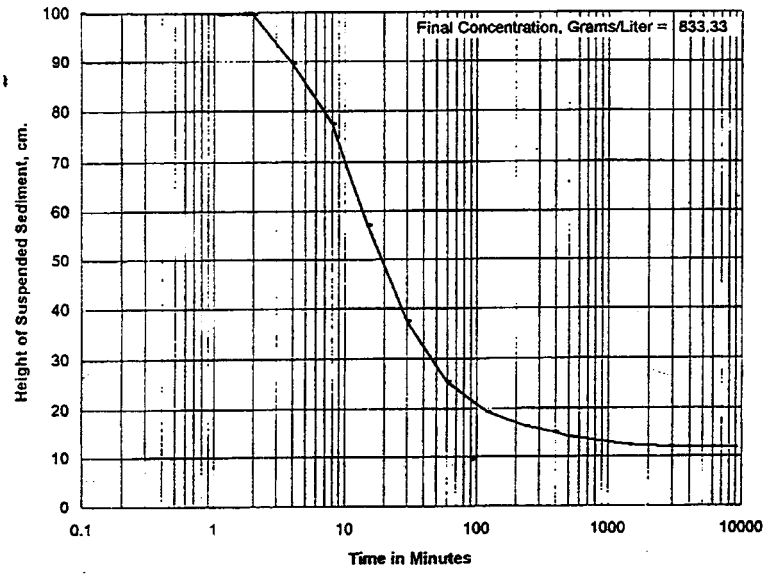


NOTES: 1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 49.12

PROJECT	JACKSONVILLE DISTRICT MIAMI HARBOR	REQ'N NO.	RM-CW-95-0135
		W.O. NO.	7727
AREA		DATE RECEIVED	5 JULY, 1995
		DATE REPORTED	25-Jul-95
BORING NO.	CB-MH-95-8	ELEVATION	-22.6 TO -28.1
SAMPLE NO.	1	LAB NO.	73/6977

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE



NOTES: 1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 52.97

PROJECT	JACKSONVILLE DISTRICT MIAMI HARBOR	REQ'N NO.	RM-CW-95-0135
		W.O. NO.	7727
AREA		DATE RECEIVED	5 JULY, 1995
		DATE REPORTED	25-Jul-95
BORING NO.	CB-MH-95-10	ELEVATION	-28.0 TO - 29.0'
SAMPLE NO.	1	LAB NO.	73/6978

APPENDIX B

PERTINENT CORRESPONDENCE

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO ATTENTION OF

March 20, 1995

Planning Division
Environmental Branch

Mr. Charles A. Oravetz
Chief, Protected Species Management Branch
National Marine Fisheries Service
9450 Koger Boulevard
St. Petersburg, Florida 33702-2496

Dear Mr. Oravetz:

Enclosed is a biological assessment prepared by the U.S. Army Corps of Engineers (Corps), Jacksonville District, under Section 7 of the Endangered Species Act for the proposed extension of the Miami Harbor Federal Navigation project.

Based on the enclosed biological information, the Corps has determined that the proposed activity will not adversely affect listed species or critical habitat.

This completes coordination under the Act unless new information should indicate that the proposed action may affect listed species or their habitats, or that the proposed action is substantially modified or a new species is listed or proposed for listing which may be affected by the action, or you request consultation. Your written response to this notification is requested.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure

BIOLOGICAL ASSESSMENT
MIAMI HARBOR CHANNEL EXTENSION
DADE COUNTY, FLORIDA

1. Location. The site of the proposed activity is the Miami Harbor channel which extends from the western end of the existing Miami Harbor Federal Navigation project (Figure 1).

2. Identification of Listed Species and Critical Habitat in the Area of the Proposed Activity. The Corps has identified the loggerhead sea turtle *Caretta caretta*, leatherback sea turtle *Dermochelys coriacea*, hawksbill sea turtle *Eretmochelys imbricata*, Kemp's ridley sea turtle *Lepidochelys kempii*, green sea turtle *Chelonia midas*, finback whale *Eubalaena glacialis*, Sei whale *Balaenoptera borealis* and sperm whale *Physeter catadon* as possibly occurring in the project area. There is no designated critical habitat for these species in the project area. Sea turtles have been observed (anecdotal) in the harbor but there have been no indications that they rest on the bottom of channels.

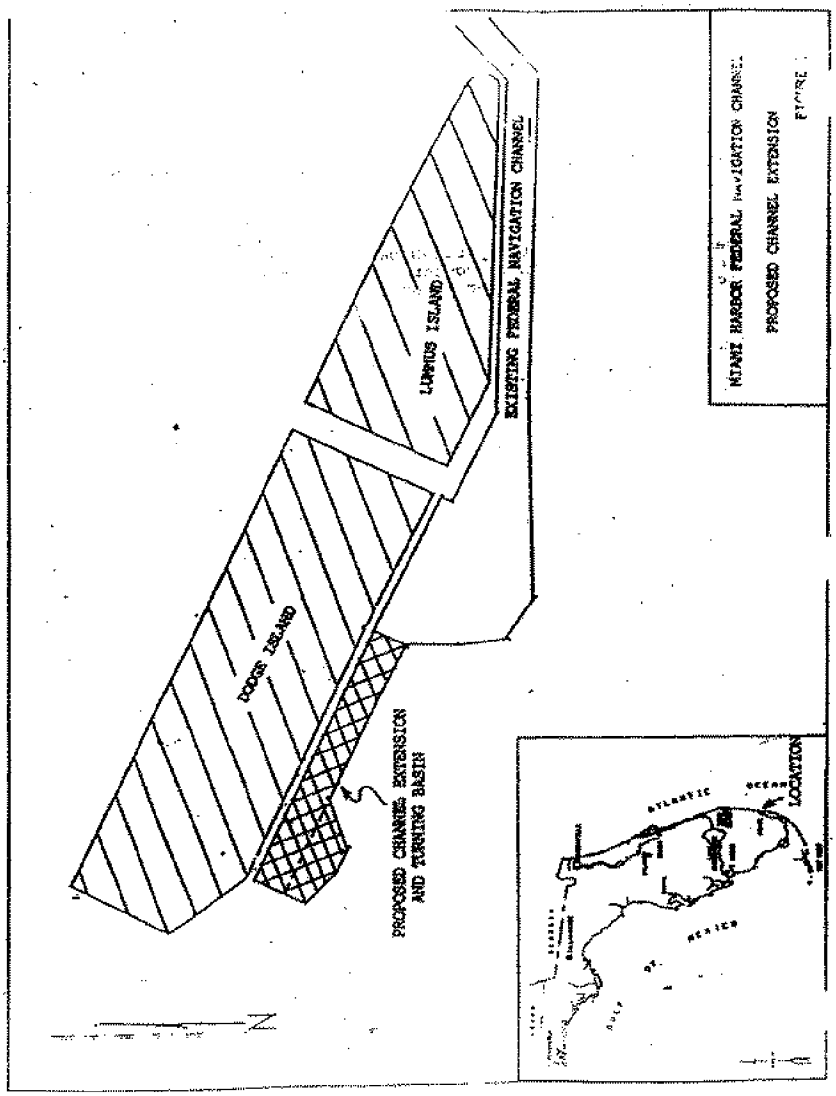
3. Description of the Proposed Activity. The Corps of Engineers proposes to deepen the existing channel a distance of 3600 feet west of the authorized Federal turning basin. The channel will be 400 feet wide beginning 100 feet south of the berthing area. Channel depths of 28, 30, 32, 34, 36, and 38 feet will be considered. The Port Authority has also requested consideration of a turning basin at the western end of the channel. The material will be disposed of in the Miami Ocean Dredged Material Disposal Site.

4. Assessment of Potential Impacts of the Proposed Activity on Listed Species. Based on the precautions listed for protected species in paragraph 5 below, the Corps has determined that none of the listed species will be adversely affected by the proposed action.

5. Efforts to Eliminate Potential Impacts to Listed Species or Critical Habitat.

a. Whales. The only area where dredging will occur in which whales could be encountered is the open ocean from Government Cut to the Ocean Dredged Material Disposal Site. If dredging is done during the time of the year that whales may be present, observers will be posted on board during those times to ensure that whales are not threatened by project activities.

b. Conditions Involving the Protection of Sea Turtles. The following precautions will be taken during dredging activities to ensure the safety of sea turtles in the area. The Contractor will instruct all personnel associated with the construction of the project about the possible presence of sea turtles in the area and the need to avoid collisions with them. If they are sighted within 100 yards of the dredging area, all appropriate precautions shall be implemented by the Contractor to ensure protection of the animals. These precautions shall include dredge shutdown if appropriate. All vessels associated with the project shall operate at "no wake" speeds at all times while in shallow waters or channels where the draft of the boat provides less than 3 feet clearance of the bottom. Boats used to transport personnel shall be shallow-draft vessels, preferably of the light-displacement category where navigational safety permits. Vessels transporting personnel between the landing and the dredge shall follow routes of deep water to the extent possible. Shore crews or personnel assigned to the disposal area for the work shift shall use upland road access if available. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing sea turtles, which are protected under the Endangered Species Act. The Contractor shall be held responsible for any sea turtle harmed, harassed, or killed as a result of the construction of the project.


LUMMUS ISLAND
DODGE ISLAND
EXISTING FEDERAL NAVIGATION CHANNEL
PROPOSED CHANNEL EXTENSION AND TURNING BASIN
MIAMI HARBOR FEDERAL NAVIGATION CHANNEL
PROPOSED CHANNEL EXTENSION
ATLANTIC
OCEAN
REGION
LOCATION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO ATTENTION OF

March 20, 1995

Planning Division
Environmental Branch

Mr. Craig Johnson
Supervisor, U.S. Fish and Wildlife Service
South Florida Ecosystems Office
Post Office Box 2676
Vero Beach, Florida 32961-2676

Dear Mr. Johnson:

Enclosed is a biological assessment prepared by the U.S. Army Corps of Engineers (Corps), Jacksonville District, under Section 7 of the Endangered Species Act for the proposed extension of the Miami Harbor Federal Navigation project.

Based on the enclosed biological information, the Corps has determined that the proposed activity will not adversely affect listed species or critical habitat.

This completes coordination under the Act unless new information should indicate that the proposed action may affect listed species or their habitats, or that the proposed action is substantially modified or a new species is listed or proposed for listing which may be affected by the action, or you request consultation. Your written response to this notification is requested.

Sincerely,

A. J. Salem
Chief, Planning Division

BIOLOGICAL ASSESSMENT
MIAMI HARBOR CHANNEL EXTENSION
DADE COUNTY, FLORIDA

1. Location. The site of the proposed activity is the Miami Harbor channel which extends from the western end of the existing Miami Harbor Federal Navigation project (Figure 1).

2. Identification of Listed Species and Critical Habitat in the Area of the Proposed Activity. Threatened or Endangered Species identified as possibly occurring in the project area are the manatee and Kemp's ridley, leatherback, green, loggerhead, and hawksbill sea turtles. There is no designated critical habitat in the project area.

3. Description of the Proposed Activity. The Corps of Engineers proposes to deepen the existing channel a distance of 3600 feet west of the authorized Federal turning basin. The channel will be 400 feet wide beginning 100 feet south of the berthing area. Channel depths of 28, 30, 32, 34, 36, and 38 feet will be considered. The Port Authority has also requested consideration of a turning basin at the western end of the channel. The material will be disposed of in the Miami Ocean Dredged Material Disposal Site.

4. Assessment of Potential Impacts of the Proposed Activity on Listed Species. Based on the precautions listed for protected species in paragraph (5) below, the Corps has determined that none of the listed species will be adversely affected by the proposed action.

5. Efforts to Eliminate Potential Impacts to Listed Species or Critical Habitat.

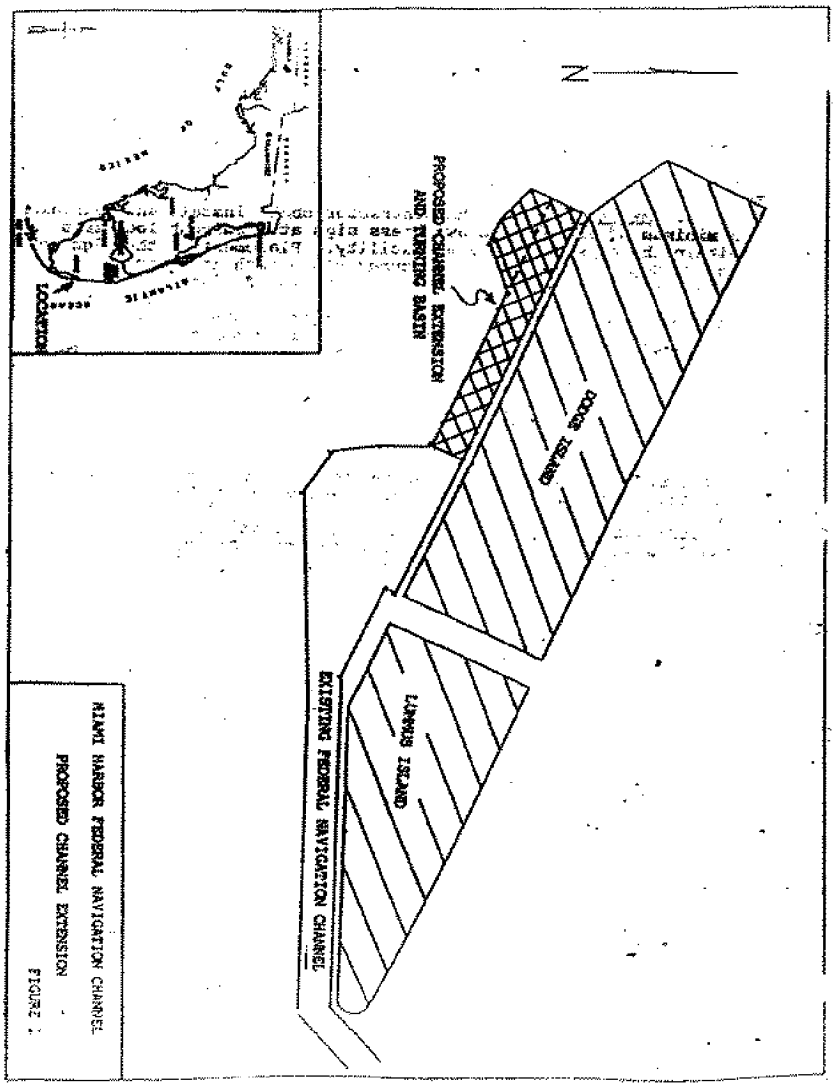
a. Conditions Involving the Protection of Manatees and Sea Turtles. The following precautions will be taken during construction activities to ensure the safety of manatees and sea turtles in the area.

b. Manatee and Sea Turtle Protection. The Contractor will instruct all personnel associated with the construction of the project about the possible presence of manatees and/or sea turtles in the area and the need to avoid collisions with them. If either is sighted within 100 yards of the dredging area, all appropriate precautions shall be implemented by the Contractor to ensure protection of the animals. These precautions shall include dredge shutdown if appropriate. All vessels associated with the project shall operate at "no wake" speeds at all times while in shallow waters or channels where the draft of the boat provides less than 3 feet clearance of the bottom. Boats used to transport personnel shall be shallow-draft vessels, preferably of the light-displacement category where navigational safety permits. Vessels transporting personnel between the landing and the dredge shall follow routes of deep water to the extent

possible. Shore crews or personnel assigned to the disposal area for the work shift shall use upland road access if available. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Endangered Species Act and the Marine Mammal Protection Act, and sea turtles, which are protected under the Endangered Species Act. The Contractor shall be held responsible for any manatee or sea turtle harmed, harassed, or killed as a result of the construction of the project.

c. Manatee Signs. The Contractor shall install and maintain a minimum of one manatee awareness sign at prominent locations within the construction area/facility. Placement of the sign on the dredge will be in a conspicuous place such as adjacent to the safety board or dining facilities. Photos of sign(s) in place must be sent to the Florida Department of Natural Resources (DNR) Marine Mammal Recovery Program (100 Eighth Avenue, SE., St. Petersburg, Florida 33701-5095) prior to construction or use of the facility. Temporary construction signs will be removed by the contractor upon completion of contract work.

d. Manatee Sighting. The Contractor shall keep a log detailing all sightings, collisions with injuries, or the killing of manatees which have occurred during the contract period. The data shall be recorded on forms provided by the Contracting Officer. (Sample form is appended to this section.) All data in original form shall be forwarded directly to Dr. Hanley K. Smith, Chief, Environmental Branch, Post Office Box 4970, Jacksonville, Florida 32232-0019, within 10 days of collection, and copies of the data will be supplied to the Contracting Officer's Representative. Any collision with a manatee or sighting of any injured or incapacitated manatee will be reported immediately to the Corps of Engineers.


N
LOCATION
PROPOSED CHANNEL EXTENSION AND TURNING BASIN
DREDGED SPOIL
LUMMUS ISLAND
EXISTING FEDERAL NAVIGATION CHANNEL
MIAMI HARBOR FEDERAL NAVIGATION CHANNEL
PROPOSED CHANNEL EXTENSION
FIGURE 1

South
Florida
Regional
Planning
Council

March 23, 1995

Mr. A. J. Salem
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

RE: SFRPC #95-0313 - Feasibility study to extend the dredged area of the Miami Harbor Federal Navigation Project, U. S. Army Corps of Engineers, Miami, Dade County.

Dear Mr. Salem:

We have reviewed the above-referenced request for comments and have the following comments:

- Council staff is concerned about the cumulative impacts of this and similar projects. The Biscayne Bay ecosystem is sensitive and is subject to significant growth pressures. While this project may have little effect on the system by itself, the cumulative impacts on the water quality and ecological integrity of the region are of concern to Council staff and need to be considered with all projects.

- Council staff is concerned about the impacts this project could have on the water quality, wildlife habitat and the overall ecological integrity of the region. The project should be consistent with the goals and policies of the City of Miami comprehensive plan.

- Staff recommends that, if this project is pursued, 1) impacts to the natural systems be minimized to the greatest extent feasible and 2) the Corps determine the extent of sensitive marine life and vegetative communities in the vicinity of the project and require protection and or mitigation of disturbed habitat.

- The goals and policies of the *Regional Plan for South Florida*, in particular those indicated below, should be observed when making decisions regarding this project.

  Policy 8.5.2 Degradation or destruction of functional wetlands and deep water habitats will occur in the Region only if:

  a) The activity is necessary to prevent or eliminate a public hazard, and

  b) The activity is in the public interest and no other reasonable alternative exists; and

  c) The habitat functions and values are significantly less than those typically associated with such habitats and the habitat cannot be reasonably restored, and

  d) The activity is water dependent, but in no case shall the activity be allowed for obtaining fill; and

e) The activity does not destroy the habitat of threatened or endangered species.

Policy 8.5.3 Whenever possible, functional wetlands and deep water habitat shall be preserved in project design. If a functional wetland or deep water habitat will be degraded or destroyed, mitigation shall be provided either through the creation of new wetland and deep water habitat, through the restoration of degraded habitat or through the enhancement of functions and values.

GOAL 9.3 To reduce discharges which degrade coastal water quality in the Region by 1995.

Policy 9.3.2 Turbidity control measures will be utilized in all phases of any construction in the coastal zone to prevent applicable violation of local, state, and federal water quality standards.

Policy 9.3.3 The cumulative effects of construction in the coastal areas will be considered in the permitting processes, as well as individual effects.

Policy 9.3.4 The biological and hydrological functions of coastal wetlands and deep water habitats lost to development will be mitigated with creation of new habitat, restoration or enhancement of degraded habitats.

GOAL 9.8 Eliminate the net loss of native coastal vegetation in the Region, and where possible, restore destroyed habitat by the year 2000.

Policy 9.8.1 Activity causing adverse effects to the seagrass population of the Region will not be allowed unless:

a) it is necessary to maintain existing navigational channels; and

b) the activity is in the public interest and no other alternative exists.

Policy 9.8.3 If mitigation is appropriate, it should be required for all lost habitat, and will be in the creation of new habitat or enhancement of existing habitat of the same or similar species in a ratio of at least twice the size of the natural area lost, and as determined feasible for the specific habitat.

Thank you for the opportunity to comment. We would appreciate being kept informed on the progress of this project. Please do not hesitate to call if you have any questions or comments.

Sincerely,

John E. Hulsey
Regional Planner

JEH/kc

CITY OF MIAMI BEACH

CITY HALL 1700 CONVENTION CENTER DRIVE MIAMI BEACH FLORIDA 33139

DEPARTMENT OF PUBLIC WORKS

March 27, 1995

Mr. A. J. Salem, Chief
Planning Division
Department of the Army
Jacksonville District Corps of Engineers
P. O. Box 4970
Jacksonville, FLorida 32232-0019

Subject: **Proposed Channel Extension and Turning Basin South Side of Dodge Island Port**

Dear Mr. Salem:

The City of Miami Beach has no objection to the proposed harbor deepening and widening along the south side of the Dodge Island Port.

Sincerely,

Vincent O. Akhimie
Director of Public Works

VOA:DR:zg

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

March 27, 1995

Colonel Terry Rice
District Engineer, Jacksonville District
Department of the Army, Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Colonel Rice:

This responds to your March 2, 1995, request for comments and information about resources, study objectives and important features related to the feasibility of extending the Miami Harbor Federal Navigation Project in Dade County, Florida. The project would extend the existing channel 3600 feet west of the authorized Federal turning basin as well as consider creating a second turning basin at the western end of the extension.

A National Marine Fisheries Service (NMFS) ecologist conducted an on-site investigation of the proposed site on March 23, 1995 along with Dade County Environmental Resource Management (DERM) staff. Based on that investigation, the NMFS is convinced that the proposed project would adversely impact several acres of submerged bay bottom which supports a variety of submerged aquatic vegetation (SAV). Species identified in the project area included Halodule wrightii and Thalassia testudinum as well as several species of macro algae. These species provide large quantities of detrital material, bind sediments thereby stabilizing the bottom and preventing erosion, act as food, and provide nursery, refuge and forage areas for many economically important marine finfish and shellfish. Snook (Centropomus undecimalis), spotted seatrout (Cynoscion nebulosus), mullet (Mugil sp.), snapper Lutjanus sp.), brown and pink shrimp (Penaeus aztecus and P. duorarum), and blue crab (Callinectes sapidus) are among the many species that require seagrass as habitat at some point during their life cycle.

Most of the impact to SAV will occur if a turning basin is included in this project. Currently, the channel extension area has depths greater than 20 feet and typically does not support SAV. The proposed turning basin area is shallow and does support seagrass and other vegetation as mentioned above. Past pipeline activities have impacted areas in the proposed turning basin. Nonetheless, the Port Authority will have to dredge through seagrass to reach the previously impacted site. Based on the loss of seagrass, NMFS would be opposed to the creation of a turning basin.

At this time, NMFS cannot quantify the potential seagrass loss due to the lack of information in the public notice. Therefore, we can offer only limited comments at this time. If you have additional questions, please contact Mr. John W. Iliff of our Miami Field Office. He may be reached at 305/595-8352.

Sincerely,

Edwin J. Kaggen

Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

cc:
Mr. A. J. Salem
Chief, Planning Division
Department of the Army, Corps of Engineers
Flood Control and Flood Plain Management
P.O. Box 4970
Jacksonville, Florida 32232-0019

F/SE02
F/SE023-ST MIAMI

METROPOLITAN DADE COUNTY, FLORIDA

METRODADE

DERM

ENVIRONMENTAL RESOURCES MANAGEMENT
33 S.W. 2nd AVENUE
MIAMI, FLORIDA 33130-1540
(305) 372-6789

March 31, 1995

A. J. Salem, Chief
Planning Division
Environmental Coordination Section
Jacksonville District
U S Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Re: Proposal to Study the Feasibility of Extending the Miami Harbor Federal Navigation Project and Expansion of the Western Turning Basin, Dade County, Florida

Dear Mr. Salem:

This letter is in response to your March 2, 1995 request for comments regarding the above referenced proposal. Please be advised that any work beyond the project footprint as authorized in 1980 under the original permit by the Corps of Engineers requires approval from the Board of County Commissioners and a Class I Coastal Construction permit from the Department of Environmental Resources Management (DERM).

We do not believe that the environmental impacts of the expanded western turning basin were considered in the Final EIS for the Seaport project. DERM advised the Seaport Department in an August 22, 1994 memorandum that a new EIS is therefore required for expansion of the west turning basin.

Please contact Craig Grossenbacher at (305) 372-6575 if you have any questions regarding this matter.

Sincerely,

Cesar O. Espinosa, P.E.
Assistant Director

cc: Dade County Seaport Dept.
Bermello, Ajamil & Partners
FDEP
USNMFS
USFWS
FGFWFC

STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

2740 CENTERVIEW DRIVE • TALLAHASSEE, FLORIDA 32399-2100

LAWTON CHILES
Governor

LINDA LOOMIS SHELLEY
Secretary

April 20, 1995

Mr. A. J. Salem
Army Corps Of Engineers
Jacksonville District
Post Office Box 4970
Jacksonville, Florida 32232-0019

RE: Navigation Projects - Extension of Miami Harbor Federal Navigation Channel - Scoping Letter for General Reevaluation Report - Miami, Dade County, Florida
SAI: FL9503060140C

Dear Mr. Salem:

The Florida State Clearinghouse is awaiting additional comments from our reviewing agencies on the above referenced project. We are therefore requesting an additional fifteen (15) days for completion of the consistency review in accordance with 15 CFR 930.41(b).

We will make every effort to conclude the review and forward the consistency determination to you on or before May 5, 1995.

Very truly yours,

Mary Anne Price

Linda Loomis Shelley
for Secretary

LLS/rk

United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. Box 2676
Vero Beach, Florida 32961-2676

IN REPLY REFER TO:

April 28, 1995

Colonel Terry Rice
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attn: Planning Division

FWS Log No.: 4-1-95-302
Proposed Action: Miami Harbor
Agency: Corps of Engineers
County: Dade

Dear Colonel Rice:

The U.S. Fish and Wildlife Service (FWS) has reviewed your letter of February 16, 1995, regarding the proposed deepening of an existing channel at Miami Harbor, Dade County, Florida, in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.). We have assigned FWS log number 4-1-95-302 to this proposed action.

The U.S. Army Corps of Engineers (COE) has determined that this action "will not adversely affect listed species or critical habitat." Before a determination of adverse or no adverse affect is made, the action agency, in this case the COE, is required to make a determination as to whether or not the proposed action "may affect" listed species. These species should be named specifically in the letter of determination. Your attached Biological Assessment names the threatened loggerhead (*Caretta caretta*), the endangered green (*Chelonia mydas*), the endangered Kemp's ridley (*Lepidochelys kempi*), the endangered leatherback (*Dermochelys coriacea*) and the endangered hawksbill (*Eretmochelys imbricata*) sea turtles. The West Indian manatee (*Trichechus manatus latirostris*) is also included in the list.

According to your letter, the standard precautions for the protection of the manatee will be followed during the excavation. During the construction operation, risk of injury to manatees should be negligible as a result of these precautions. Thus, we concur that risks posed to manatees by project construction will be negligible. However, the risk of manatee mortality due to a collision with ships using the new facility may be significant. Our files show that critical habitat for the manatee extends south of Dodge Island and includes the proposed project area. This project has the potential to adversely affect designated critical habitat for the manatee.

We have not received all of the information necessary to determine if formal consultation is necessary. At this time, we would like to enter into informal consultation in accordance with section 7(a) of the ESA. To help us determine how the proposed project may affect the endangered manatee, its designated critical habitat, and the threatened and endangered sea turtles listed above, we request the following information:

1. Information about manatee use of the area and the changes in ship traffic patterns which could result from the proposed project. This will allow us to assess the potential for an increase in boat-related manatee mortality after the project is completed.

2. Up-to-date aerial manatee survey records for this area. These records may be obtained from the Florida Department of Environmental Protection, Office of Endangered Species Management.

3. A detailed description of the anticipated use of the proposed channel.

4. More specific information on sea turtle use of the area. The FWS is skeptical that Kemp's ridley sea turtles have ever been sighted in Biscayne Bay; but green sea turtles likely have been sighted near the project area. Please provide us with this information. Documentation of the presence or absence of other threatened and endangered sea turtles is also needed before the FWS can determine the potential for adverse affects on these turtles.

To assist us in our review during informal consultation, please provide the above requested material, or a statement explaining why that information cannot be made available. After we receive and review this information, we will work with you to determine how the proposed project may affect the above referenced species.

In view of the potential for this project to affect threatened and endangered species and designated critical habitat, we recommend that you postpone final action on this project until the consultation is complete. This position will automatically be reconsidered upon completion of coordination under the ESA.

Thank you for the opportunity to comment on this project. If you have any questions, please contact Chuck Sultzman of my staff at (407)562-3909.

Sincerely yours,

Kalani D. Cairns

for Craig Johnson
Supervisor, South Florida Ecosystem Office

cc:
FWS, Jacksonville, FL (Attn: Sandy MacPherson)
NMFS, Miami, FL
FDEP (OPSM), Tallahassee, FL
FGFWFC, Vero Beach, FL

STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

2740 CENTERVIEW DRIVE • TALLAHASSEE, FLORIDA 32399-2100

LAWTON CHILES
Governor

LINDA LOOMIS SHELLEY
Secretary

May 16, 1995

Mr. A. J. Salem
Army Corps Of Engineers
Jacksonville District
Post Office Box 4970
Jacksonville, Florida 32232-0019

RE: Navigation Projects - Extension of Miami Harbor Federal Navigation Channel - Scoping Letter for General Reevaluation Report - Miami, Dade County, Florida
SAI: FL9503060140C

Dear Mr. Salem:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Governor's Executive Order 93-194, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced project.

The Department of Environmental Protection (DEP) indicates that the project will require permits prior to the start of construction. The proposed project is located within the Biscayne Bay Aquatic Preserve and must also comply with Chapter 258, Florida Statutes, and Chapter 18-18, Florida Administrative Code, regarding the leasing of sovereign submerged lands within aquatic preserves. In addition, the project may result in impacts to seagrasses and benthic habitats, protected species, and water quality. Therefore, the reevaluation report should include a thorough analysis of the project's potential impacts on these resources and the Aquatic Preserve. The proposed dredging methods, spoil disposal sites, and alignment of the pipeline should also be evaluated. The Corps of Engineers (Corps) is advised to coordinate closely with the DEP regarding the above issues. Please refer to the enclosed DEP comments.

The South Florida Water Management District (SFWMD) indicates that the project must be conducted in a manner which minimizes impacts to water transparency. The Corps is also advised to evaluate the potential impacts to the seagrass beds which occur in the project area. Please refer to the enclosed SFWMD comments.

The Department of State (DOS) indicates that the Corps has provided additional information to the DOS which satisfies the conditions specified in the DOS April 14, 1995 letter. Therefore, the DOS has determined that the project will not result in impacts to any significant archaeological or historic properties. Please refer to the enclosed DOS comments of May 11, 1995.

Based on the information contained in the notification of intent and the enclosed comments provided by our reviewing agencies, the state has determined that, at this stage, the above-referenced project is consistent with the Florida Coastal Management Program (FCMP). All subsequent environmental documents prepared for this project must be reviewed to determine the project's continued consistency with the FCMP. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. All future environmental documents submitted for this project must be submitted to the Florida State Clearinghouse for interagency review. Thank you for the opportunity to review this project.

Very truly yours,

Linda Loomis Shelley
Secretary

LLS/rk

Enclosures

cc: Carliane Johnson, Department of Environmental Protection
George Percy, Department of State
David Thatcher, South Florida Water Management District
Robert Hebert, Department of Transportation

Department of
Environmental Protection

Lawton Chiles
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Virginia B. Wetherell
Secretary

May 8, 1995

Suzanne Traub-Metlay
State Clearinghouse
Executive Office of the Governor
The Capitol
Tallahassee, Florida 32399-0001

RE: COE/Miami Harbor Federal Navigation Project, Dade County
SAI: FL9503060140C

Dear Ms. Traub-Metlay:

The U.S. Army Corps of Engineers (Corps) has requested comments regarding a proposed feasibility study to extend the Miami Harbor Federal Navigation Project. The General Reevaluation Report would examine deepening the existing channel 3600 feet to the west of the Federal turning basin. The channel will be 400 feet wide beginning 100 feet south of the berthing area. Channel depths of 28, 30, 32, 34, 36, and 38 feet will be considered, in addition to adding a turning basin at the western end of the channel.

At this time, we have no objections to proceeding with the study. However, we would be better able to gauge the appropriateness and best configuration of the project once a full environmental assessment or environmental impact statement is completed. It will be particularly important for the environmental document to be comprehensive in its evaluation of the project. The purpose and need for the expansion should be thoroughly explained and both short and long term impacts should be evaluated. The department's permit review will stress direct, cumulative, and secondary resource impacts in its public interest evaluation. Project justification will be an important consideration in making the public interest determination.

Aquatic Preserve

The project area is within the Biscayne Bay Aquatic Preserve. Chapters 258, Florida Statutes, and 18-18, Florida Administrative Code, prohibit further leasing of sovereign submerged lands within the preserve unless there is extreme hardship on the part of the applicant and the project is determined to be in the public interest. If the project meets these requirements, minimum dredging associated with public navigation projects can be allowed. The environmental document should thoroughly address the purpose and need for the project so that sufficient information for the public interest evaluation is available.

Seagrasses and Benthic Habitats

The area directly south of the existing channel is covered in dense seagrass beds. The proposed expansion of the western turning basin may directly impact 25 acres of seagrasses. The proposed deepening of the channel may also require the elimination of seagrass beds due to wider top widths. Other impacts may result from mechanical disturbances, turbid discharges, and sedimentation. Additional details regarding the project design and the distribution of seagrasses and benthic communities will be required in order to fully evaluate potential impacts.

Protected Species

Impacts to seagrasses would adversely affect the endangered West Indian manatee. The waters adjacent to the project location are regularly used by manatees for feeding and the submerged aquatic vegetation south of the existing channel provides important manatee habitat. The proposed project is also within a quarter mile of a manatee "no entry zone". This was established pursuant to Chapter 62N-22.025, F.A.C., because of high manatee use and associated sensitive behaviors occurring in the area, such as cavorting, mating, nursing, resting, and feeding.

Due to the presence of limestone in the area, blasting may be necessary to achieve certain depths. If the results of the study conclude that blasting is acceptable in manatee habitat areas, additional scrutiny and requirements may be necessary.

The utilization of the project area for transient species and their subsequent impacts should be addressed.

Water Quality

The project is located in waters designated as Outstanding Florida Waters. Prevention of water quality degradation will be a priority consideration in making the water quality and public interest determinations for the wetland/environmental resource permit.

Geotechnical and chemical information describing the sediments in the area of the proposed channel deepening and turning basin is necessary in order to fully evaluate the project's potential impacts to water quality and environmental resources. A complete hydrographic model will be required to evaluate flushing and the potential for the long-term accumulation of pollutants as a result of the project.

The project document should address turbidity control measures

and procedures that will be utilized for all construction activities. This is especially important in light of apparent water quality violations related to current, on-going, dredging, activities.

Dredging Methods

The method of dredging should be described. Because the project is within and near manatee habitat and a critical wildlife area, blasting is strongly discouraged.

Spoil Disposal Sites

Further information regarding proposed disposal areas will be required to determine potential impacts. The method used to dispose of the spoil should be detailed in the study as both turbidity and dispersal of contaminants could be an issue at the excavation and disposal sites. The report should also address the methods for spoil containment.

The Port of Miami has recently applied to the Department (File No. 132605579) to fill the existing NOAA slip on Dodge Island. While that application is currently incomplete, it is possible that some of the dredge material associated with the proposed deepening project could be used to accomplish the filling of the NOAA slip.

Pipeline

There is an existing 72" pipeline in the area proposed for the turning basin. The pipeline connects the Virginia Key sewage treatment facility with the mainland. Although the pipeline has been out of service since 1994, it is being considered for future use. In order to dredge the proposed turning basin, the pipeline would have to be re-routed or submerged to a greater depth. Either of these options may result in additional impacts to seagrasses.

If a feasibility study is prepared, a draft of the document should be provided to the state for review. We also need to review any draft documents prepared in compliance with the National Environmental Policy Act. Future reviews will evaluate the project's consistency with the Department's authorities in the Florida Coastal Management Program. Close coordination with department staff is recommended, particularly in developing the project design and addressing the issues raised above.

We appreciate the opportunity to provide comments at this

point in the planning of this project. If you have any questions or require further information, please contact me at 487-2231. Specific questions concerning permit requirements should be directed to Eric Bush at 488-0130.

Sincerely,

Carliane Johnson
Environmental Specialist
Office of Intergovernmental Programs

/cdj
cc: Eric Bush
Phil Flood
Ed Irby
Larry O'Donnell

COUNTY: DADE

DATE: 03/14/95
COMMENT DUE DATE: 03/30/95
SAI#: FL9503060140C

STATE AGENCIES		LOCAL/OTHER		OPB POLICY UNITS	
—	Agriculture	—	NWFWMD	—	Public Safety
—	Board of Regents	X	SFWMD	—	Education
X	Commerce	—	SWFWMD	—	Environment/C & ED
X	Community Affairs	—	SJRWMD	—	General Government
—	Education	—	SRWMD	—	Health & Human Srv
X	Environmental Protection	—		—	Revenue & Eco. Ana
X	Game & Fish Comm	—		—	SCH
—	Health & Rehab Srv	—		X	SCH/CON
—	Highway Safety				
—	Labor & Employmnt				
—	Law Enforcement				
—	Marine Fish Comm				
—	State Library				
X	State				
X	Transportation				
—	Trans Disad. Comm				
—	DEP District				
—					
—					

RECEIVED
APR 3 1995
Florida Coastal Management

A attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

— Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

X Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

— Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

— Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

FOR CONSISTENCY PROJECTS, SEE REVERSE SIDE FOR INSTRUCTIONS.

To: State Clearinghouse
Executive Office of the Governor -OPB
Room 1603, The Capitol
Tallahassee, FL. 32399-0001
(904) 488-8114 (SC 278-8114)

Florida Coastal Management Director
Department of Community Affairs
Suite 305, Rhyne Building
Tallahassee, FL. 32399-2100
(904) 922-5438 (SC 292-5438)

EO. 12372/NEPA
- ☐ No Comment
- ☒ Comments Attached
- ☐ Not Applicable

Federal Consistency
- ☐ No Comment/Consistent
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

From:
Division/Bureau: Comprehensive Planning
Reviewer: Frank Duke
Date: 3/14/95

South Florida Water Management District
3301 Gun Club Road, West Palm Beach, Florida 33406 • (407) 686-8800 • FL WATS 1-800-432-2045

GOV 04 RF# 95342

March 29, 1995

Ms. Suzanne Traub-Metlay
State Clearinghouse
Executive Office of the Governor - OPB
Room 1603, The Capitol
Tallahassee, FL 32399-0001

Dear Ms. Traub-Metlay:

Subject: US Army Corps of Engineers Miami Harbor Federal Navigation project
SAI# FL9503060140C

The South Florida Water Management District appreciates the opportunity to review and comment on the US Army Corps of Engineers Miami Harbor Federal Navigation project. Our review of the preliminary project description indicates that the project involves a deepening of the existing shipping channel and consideration of a new turning basin at the western end of the channel. Based on this information, the District offers the following comments.

Degraded water transparency may occur as a result of the dredging activities. Such adverse impacts must be minimized. Any proposal to develop a new turning basin must consider the impacts of dredging on seagrass beds, as well as water quality.

Sincerely,

David B. Thatcher, AICP
Director
Comprehensive Planning Division
Planning Department

DT/FD/ng
c: Florida Coastal Management Director

FLORIDA DEPARTMENT OF STATE
Sandra B. Mortham
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Director's Office (904 488-1480
Telecopier Number (FAX) (904) 488-3353
Florida Coastal Management Program

May 11, 1995

Ms. Suzanne Traub-Metlay
State Clearinghouse
Executive Office of the Governor
Room 1603, The Capitol
Tallahassee, Florida 32399-0001

In Reply Refer To:
Robin D. Jackson
Historic Sites
Specialist
(904) 487-2333
Project File No. 950966B

RE: Cultural Resource Assessment Request
SAI# FL9503060140C
Miami Harbor Federal Navigation Channel
Proposed Channel Extension
Dade County, Florida

Dear Ms. Traub-Metlay:

In accordance with the provisions of Florida's Coastal Zone Management Act and Chapter 267, Florida Statutes, as well as the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project(s) for possible impact to historic properties listed, or eligible for listing, in the National Register of Historic Places, or otherwise of historical or architectural value.

This office wishes to rescind our earlier recommendation that the project area be subjected to a professional magnotometer survey. We have reviewed additional information provided to this office during a telephone conversation with Ms. Janice Adams of the Army Corps of Engineers. Ms. Adams has also provided us with a more detailed map than that submitted with the original application. Based on this additional information, this agency wishes to withdraw its recommendations of April 14, 1994. The project area need not be subjected to a professional magnotometer survey. Therefore, the applicant has our recommendation for permit with no conditions.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Jrj
xc: Jasmin Raffington, FCMP-DCA

FLORIDA DEPARTMENT OF TRANSPORTATION

MEMORANDUM

Date: March 27, 1995

To: State Clearinghouse

From: Robert G. Hebert, Jr.
Manager-Ports/Intermodal
Florida Department of Transportation
SC 278-5704 FAX SC 277-3403

Copies: FDOT ICAR Coordinator w/att., FDOT District 6 Public Transportation Manager, Florida Coastal Management Director (DCA), File

Subject: ICAR Federal Consistency Project Review Proces
Miami Harbor
SAI#'s FL9503060140C

In accordance with departmental procedure 525-010-205-b, and State Clearinghouse requirements for review and comment on potential federal projects that may affect state programs and objectives, please be advised that the above-referenced proposed study or project:

__ Does influence and impose a potential impact on existing state programs or objectives under Rail Office jurisdiction to the extent noted in the following comments:

_X_ Does not influence or impose a potential impact on existing state programs or objectives under Rail Office jurisdiction at this time, and no comments or recommendations are required.

Should further information or explanation be required, please feel free to contact the Rail Office at (904) 488-5704.

RGH/
Attachment

APPENDIX 3

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

STATE TRANSPORTAT

INTERGOVERNMENTAL COORDINATION AND REVIEW
ROUTING SHEET

RECEIVED
MAR 2 0 1995

DATE: 3/17/95

TO: Norm Feder,D1; Aage Schroder, D2; Marvin Stukey,D3; Joe Yesbeck, D4; Jim Kishler,D5
Servando Parapar,D6; David Twiddy, D7; Leroy Irwin,MS37; Rob Hebert,MS25;Ashbaker,

SAI#: FL950306014OE

Application Transmitted: Miami Harbor

Date Response Due to the Clearinghouse: 3/30

Please review and comment regarding the attached application in accordance with Department Procedure 525-010-205-b. A letter of response to the Director of the Clearinghouse and this routing sheet should be completed and returned as directed in the procedure.

The following criteria, as appropriate to the project, should be used to evaluate the application and develop your comments:

- **Florida Transportation Plan**
- **Adopted Work Program**
- **Transportation Improvement Plan (TIP)**
- **Right of Way Preservation and Advanced Acquisition**
- **Transit Development Program**
- **MPO Comprehensive Transportation Plan and 20 year Transportation Plan**
- **Florida Rail System Plan**
- **Florida Aviation System Plan**
- **Local Airport Master Plan**
- **Florida Seaport Mission Plan**
- **Environment Commitments**
- **Unified Planning Work Program**
- **Level of Service**
- **Access Management**

If comments are warranted based on other criteria, they should be included.

Work Program Item Number: _____ (if applicable).

RONNICE S. FREEMAN (Name Changed)
Central Office ICAR Coordinator - MS #28

TYPE: General Aviation Rail Seaports Environment
Transit

COUNTY: DADE

DATE: 03/14/95
COMMENT DUE DATE: 03/30/95
SAI#: FL9503060140C

STATE AGENCIES

—	Agriculture
—	Board of Regents
X	Commerce
X	Community Affairs
—	Education
X	Environmental Protection
X	Game & Fish Comm
—	Health & Rehab Srv
—	Highway Safety
—	Labor & Employmnt
—	Law Enforcement
—	Marine Fish Comm
—	State Library
X	State
X	Transportation
—	Trans Disad. Comm
—	DEP District
—	
—	

LOCAL/OTHER

—	NWFWMD
X	SFWMD
—	SWFWMD
—	SJRWMD
—	SRWMD
—	
—	

OPB POLICY UNITS

—	Public Safety
—	Education
—	Environment/C & ED
—	General Government
—	Health & Human Srv
—	Revenue & Eco. Ass
—	SCH
X	SCH/CON

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

— Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

X Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

— Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

— Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

FOR CONSISTENCY PROJECTS, SEE REVERSE SIDE FOR INSTRUCTIONS.

To: State Clearinghouse
Executive Office of the Governor -OPB
Room 1603, The Capitol
Tallahassee, FL. 32399-0001
(904) 488-8114 (SC 278-8114)

Florida Coastal Management Director
Department of Community Affairs
Suite 305, Rhyne Building
Tallahassee, FL. 32399-2100
(904) 922-5438 (SC 292-5438)

EO. 12372/NEPA

- ☑ No Comment
- ☐ Comments Attached
- ☐ Not Applicable

Federal Consistency

- ☑ No Comment/Consistent
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

From:
Division/Bureau: FDOT Rail Office
Reviewer: [illegible] Manager - Ports/Intermodal
Date: 3/27/95

RECEIVED 3/17/95

COUNTY: DADE

DATE: 03/14/95
COMMENT DUE DATE: 03/30/95
SAI#: FL9503060140C

STATE AGENCIES		LOCAL/OTHER		OPB POLICY UNITS	
___	Agriculture	___	NWFWMD	___	Public Safety
___	Board of Regents	_X_	SFWMD	___	Education
_X_	Commerce	___	SWFWMD	___	Environment/C & ED
_X_	Community Affairs	___	SJRWMD	___	General Government
___	Education	___	SRWMD	___	Health & Human Srv
_X_	Environmental Protection	___		___	Revenue & Eco. Ana
_X_	Game & Fish Comm	___		___	SCH
___	Health & Rehab Srv			_X_	SCH/CON
___	Highway Safety				
___	Labor & Employmnt				
___	Law Enforcement				
___	Marine Fish Comm				
___	State Library				
_X_	State				
_X_	Transportation				
___	Trans Disad. Comm				
___	DEP District				
___					
___					

RECEIVED
MAR 22 1995
Florida Coastal Management Program

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

___ **Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.**

_X_ **Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.**

___ **Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.**

___ **Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.**

FOR CONSISTENCY PROJECTS, SEE REVERSE SIDE FOR INSTRUCTIONS.

To: State Clearinghouse
Executive Office of the Governor -OPB
Room 1603, The Capitol
Tallahassee, FL. 32399-0001
(904) 488-8114 (SC 278-8114)

Florida Coastal Management Director
Department of Community Affairs
Suite 305, Rhyne Building
Tallahassee, FL. 32399-2100
(904) 922-5438 (SC 292-5438)

EO. 12372/NEPA
- [x] No Comment
- [ ] Comments Attached
- [ ] Not Applicable

Federal Consistency
- [x] No Comment/Consistent
- [ ] Consistent/Comments Attached
- [ ] Inconsistent/Comments Attached
- [ ] Not Applicable

From: Florida Department of Commerce
Division of Economic Development
Division/Bureau: Bureau of Economic Analysis
Reviewer: A. S. Cornelius
Date: 3-20-95

United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. Box 2676
Vero Beach, Florida 32961-2676

August 14, 1995

IN REPLY REFER TO:

Colonel Terry Rice
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attn: Planning Division

Dear Colonel Salt:

In accordance with transfer fund agreement RM-CW-95-0112, the U.S. Fish and Wildlife Service (FWS) has performed a site inspection of the proposed Miami Harbor turning basin and navigation channel expansion area. FWS and Dade County Biologists snorkeled an approximately one half-mile long transect which meandered through the proposed turning basin. Depths within the area inspected ranged from 4 feet M.L.W. to about 12 feet M.L.W. Underwater visibility was poor, about 1 to 2 feet. Three species of seagrasses are present at the project site: manatee grass (*Syringodium filiforme*), shoal grass (*Halodule wrightii*), and *Halophila decipiens* with manatee grass being the most abundant species.

The FWS is concerned about the possible destruction of these seagrasses due to the inconsistency in results when seagrass plantings are attempted for seagrass mitigation. Generally, in-kind mitigation for the loss of manatee grass is thought to be impractical. Out-of-kind mitigation has been considered in areas where seagrasses beds are not extensive.

In order for the FWS to completely assess project impacts, and to assist us in our review of over-all project planning, the areal extent of the subject seagrasses should be quantified. The most effective means toward quantification of seagrass habitat is through aerial photography. The FWS is, therefore, requesting that high resolution, controlled color aerial photographs of the area be taken during a period when dredge water clarity near the Port exceeds 15 feet. The FWS should be provided with enlarged prints of these aerials showing an outline of the new dredge area at your earliest convenience.

Sincerely yours,

for Craig Johnson
Supervisor, South Florida Ecosystem Office

cc:
EPA, Atlanta, GA
NMFS, Miami, FL
FWS, Jacksonville, FL
Dade County, DERM, (attn: Craig Grossenbacher)

November 17, 1995

Planning Division
Environmental Branch

Mr. Charles Oravetz
Chief, Endangered Species Management Branch
National Marine Fisheries Service
9450 Koger Boulevard
St. Petersburg, Florida 33702-2496

Dear Mr. Oravetz:

On March 20, 1995, the Jacksonville District, U.S. Army Corps of Engineers (Corps) initiated consultation under Section 7 of the Endangered Species Act for the proposed extension of the Miami Harbor Federal Navigation Project. At that time, the proposal was to deepen the existing channel a distance of 3600 feet west of the authorized Federal turning basin. Further economic studies, however, have indicated that a channel extension of only 1500 feet is economically justified. The proposed extension will continue to have a width of 400 feet beginning 100 feet south of the berthing area. Channel depths of 28, 30, 32, 34, 36, and 38 feet will still be considered. Because this is a significant change in the proposed action, the Corps is reinitiating formal consultation under the Endangered Species Act.

Because the basic conditions have not changed and the proposed action has been greatly reduced in scope, the previous determination by the Corps of no adverse affects to listed species or critical habitat remains in effect.

This completes coordination under the Act unless new information should indicate that the proposed action may affect listed species or their habitats, or that the proposed action is substantially modified, or a new species is listed or proposed for listing which may be affected by the proposed action, or you request consultation. Your written response to this notification is requested.

Sincerely,

A. J. Salem
Chief, Planning Division

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO ATTENTION OF

March 2, 1995

Planning Division
Environmental Branch

TO WHOM IT MAY CONCERN:

The Miami Port Authority has requested that the U.S. Army Corps of Engineers (Corps), Jacksonville District, study the feasibility of extending the Miami Harbor Federal Navigation Project (Figure 1). The Corps will prepare a General Reevaluation Report in response to the Port Authority's request.

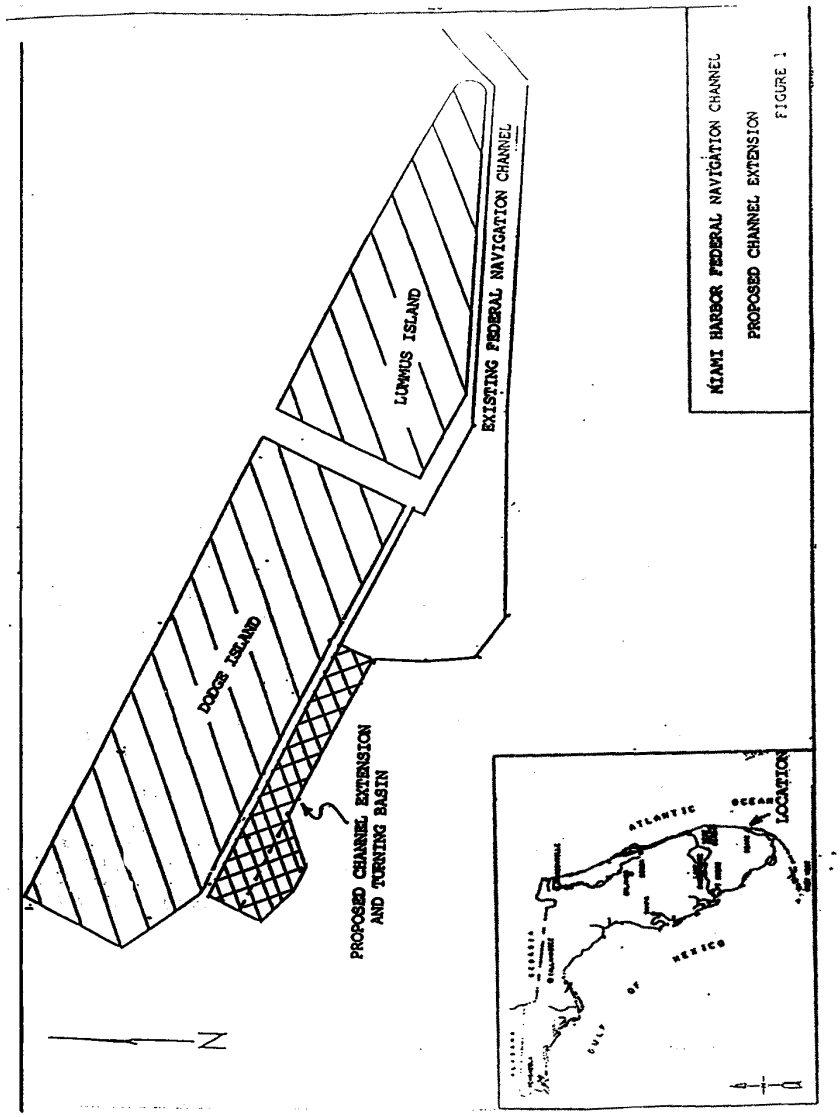
The proposal is to deepen the existing channel a distance of 3600 feet west of the authorized Federal turning basin. The channel will be 400 feet wide beginning 100 feet south of the berthing area. Channel depths of 28, 30, 32, 34, 36, and 38 feet will be considered. The Port Authority has also requested consideration of a turning basin at the western end of the channel.

The Corps welcomes your views, comments, and information about resources, study objectives, and important features within the described study area, as well as any suggested improvements. Letters of comment or inquiry should be addressed to the letterhead address to the attention of Planning Division, Environmental Coordination Section, and received by this office within 30 days of the date of this letter.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure


KIAWAH HARBOR FEDERAL NAVIGATION CHANNEL
PROPOSED CHANNEL EXTENSION
FIGURE 1
EXISTING FEDERAL NAVIGATION CHANNEL
LUNGUS ISLAND
DOGGS ISLAND
PROPOSED CHANNEL EXTENSION AND TURNING BASIN
N
LOCATION
ATLANTIC
OCEAN
MEXICO
GULF OF

November 17, 1995

Planning Division
Environmental Branch

Mr. Craig Johnson
Supervisor
South Florida Ecosystem Office
Post Office Box 2676
Vero Beach, Florida 32961-2676

Dear Mr. Johnson:

On March 20, 1995, the Jacksonville District, U.S. Army Corps of Engineers (Corps) initiated consultation under Section 7 of the Endangered Species Act for the proposed extension of the Miami Harbor Federal Navigation Project. At that time, the proposal was to deepen the existing channel a distance of 3600 feet west of the authorized Federal turning basin. Further economic studies, however, have indicated that a channel extension of only 1500 feet is economically justified. The proposed extension will continue to have a width of 400 feet beginning 100 feet south of the berthing area. Channel depths of 28, 30, 32, 34, 36, and 38 feet will still be considered. Because this is a significant change in the proposed action, the Corps is reinitiating formal consultation under the Endangered Species Act.

In your response to our initial letter, you requested information regarding sea turtles and manatees. Although the project area is within the range of all of the listed species, the Corps does not have specific information such as manatee use of the area and changes in ship traffic patterns following completion of the project. The existing channel is already heavily utilized by vessels accessing the Miami River and the increased boat traffic resulting from the project will be insignificant. The only change in this particular location will be a very slight increase in larger draft boats using the 1500 foot segment.

Because the basic conditions have not changed and the proposed action has been greatly reduced in scope, the previous determination by the Corps of no adverse affects to listed species or critical habitat remains in effect.

This completes coordination under the Act unless new information should indicate that the proposed action may affect listed species or their habitats, or that the proposed action is substantially modified, or a new species is listed or proposed for listing which may be affected by the proposed action, or you request consultation. Your written response to this notification is requested.

Sincerely,

A. J. Salem
Chief, Planning Division

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive N.
St. Petersburg, FL 33702

F/SEO13:JEB

FEB 9 1996

Mr. A. J. Salem
Chief, Planning Division
U.S. Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Salem:

This responds to your request for reinitiation of consultation on the proposed Miami Harbor Federal Navigation Project in Miami, Florida. The original request for consultation, on March 20, 1995, was on a proposal to deepen the existing channel a distance of 3600 feet west of the authorized federal turning basin. The request for reinitiation is based upon a proposal to extend the existing channel 1500 feet rather than 3600 feet past the turning basin. A biological assessment (BA) was transmitted pursuant to Section 7 of the Endangered Species Act of 1973 (ESA).

On August 25, 1995, the National Marine Fisheries Service issued a biological opinion to the Corps of Engineers (COE) on dredging activities along the Atlantic coast from North Carolina to Key West, Florida. We have reviewed the BA and concur with your determination that the proposed project is not likely to adversely affect listed species under our jurisdiction. This concurrence is based upon compliance by the COE with all protective measures described in the August 25, 1995 opinion.

This concludes consultation responsibilities under Section 7 of the ESA. However, consultation should be reinitiated if new information reveals impacts of the identified activity that may affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified, or critical habitat is determined that may be affected by the proposed activity.

If you have any questions please contact Jeffrey Brown, Fishery Biologist, at (813) 570-5312.

Sincerely,

Andrew J. Kemmerer
Regional Director

March 20, 1995

Planning Division
Environmental Branch

Mr. Charles A. Oravetz
Chief, Protected Species Management Branch
National Marine Fisheries Service
9450 Koger Boulevard
St. Petersburg, Florida 33702-2496

Dear Mr. Oravetz:

Enclosed is a biological assessment prepared by the U.S. Army Corps of Engineers (Corps), Jacksonville District, under Section 7 of the Endangered Species Act for the proposed extension of the Miami Harbor Federal Navigation project.

Based on the enclosed biological information, the Corps has determined that the proposed activity will not adversely affect listed species or critical habitat.

This completes coordination under the Act unless new information should indicate that the proposed action may affect listed species or their habitats, or that the proposed action is substantially modified or a new species is listed or proposed for listing which may be affected by the action, or you request consultation. Your written response to this notification is requested.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure

BIOLOGICAL ASSESSMENT
MIAMI HARBOR CHANNEL EXTENSION
DADE COUNTY, FLORIDA

1. Location. The site of the proposed activity is the Miami Harbor channel which extends from the western end of the existing Miami Harbor Federal Navigation project (Figure 1).

2. Identification of Listed Species and Critical Habitat in the Area of the Proposed Activity. The Corps has identified the loggerhead sea turtle *Caretta caretta*, leatherback sea turtle *Dermochelys coriacea*, hawksbill sea turtle *Eretmochelys imbricata*, Kemp's ridley sea turtle *Lepidochelys kempii*, green sea turtle *Chelonia midas*, finback whale *Eubalaena glacialis*, Sei whale *Balaenoptera borealis* and sperm whale *Physetar catadon* as possibly occurring in the project area. There is no designated critical habitat for these species in the project area. Sea turtles have been observed (anecdotal) in the harbor but there have been no indications that they rest on the bottom of channels.

3. Description of the Proposed Activity. The Corps of Engineers proposes to deepen the existing channel a distance of 3600 feet west of the authorized Federal turning basin. The channel will be 400 feet wide beginning 100 feet south of the berthing area. Channel depths of 28, 30, 32, 34, 36, and 38 feet will be considered. The Port Authority has also requested consideration of a turning basin at the western end of the channel. The material will be disposed of in the Miami Ocean Dredged Material Disposal Site.

4. Assessment of Potential Impacts of the Proposed Activity on Listed Species. Based on the precautions listed for protected species in paragraph 5 below, the Corps has determined that none of the listed species will be adversely affected by the proposed action.

5. Efforts to Eliminate Potential Impacts to Listed Species or Critical Habitat.

a. Whales. The only area where dredging will occur in which whales could be encountered is the open ocean from Government Cut to the Ocean Dredged Material Disposal Site. If dredging is done during the time of the year that whales may be present, observers will be posted on board during those times to ensure that whales are not threatened by project activities.

b. Conditions Involving the Protection of Sea Turtles. The following precautions will be taken during dredging activities to ensure the safety of sea turtles in the area. The Contractor will instruct all personnel associated with the construction of the project about the possible presence of sea turtles in the area and the need to avoid collisions with them. If they are sighted within 100 yards of the dredging area, all appropriate precautions shall be implemented by the Contractor to ensure protection of the animals. These precautions shall include dredge shutdown if appropriate. All vessels associated with the project shall operate at "no wake" speeds at all times while in shallow waters or channels where the draft of the boat provides less than 3 feet clearance of the bottom. Boats used to transport personnel shall be shallow-draft vessels, preferably of the light-displacement category where navigational safety permits. Vessels transporting personnel between the landing and the dredge shall follow routes of deep water to the extent possible. Shore crews or personnel assigned to the disposal area for the work shift shall use upland road access if available. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing sea turtles, which are protected under the Endangered Species Act. The Contractor shall be held responsible for any sea turtle harmed, harassed, or killed as a result of the construction of the project.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. Box 2676
Vero Beach, Florida 32961-2676

February 29, 1996

IN REPLY REFER TO:

Colonel Terry L. Rice
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attn: Planning Division

FWS Log No.: 4-1-95-302
Project: Miami Harbor
County: Dade

Dear Colonel Rice:

Thank you for your letter dated November 17, 1995, notifying us that the scope of the Civil Works project referenced above has been reduced. The U.S. Fish and Wildlife Service (FWS) submits these comments in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.).

The U.S. Army Corps of Engineers (COE) proposes to deepen a 400 foot-wide by 1,500 foot-long section of an existing navigation channel at the Port of Miami, Dade County, Florida. This project was previously planned to include 3,600 feet of navigation channel west of the existing turning basin but has been substantially reduced in scope.

In a previous letter dated February 16, 1995, the COE determined that the initial project would have "no effect" on the following threatened and endangered species: West Indian manatee (*Trichechus manatus latirostris*), loggerhead sea turtle (*Carertta caretta*), green sea turtle (*Chelonia mydas*), Kemp's ridley sea turtle (*Lepidochelys kempi*), leatherback sea turtle (*Dermochelys coreacia*), and the hawksbill sea turtle (*Eretmochelys imbricata*). In the letter dated November 17, 1995, the COE notified the FWS that the scope of the project has been reduced and that their initial determination of "no effect" still applies. We do not concur with a determination of no effect for the manatee.

Adverse affects to manatees could occur during construction or by an increase in boat traffic within the dredge area after construction. However, this project would only result in a minor increase in slow moving ship traffic within a very small area which is already heavily traveled. Due to the limited effect this change in ship traffic is expected to have on the manatee and since the COE has assured us that the standard manatee construction conditions will be adhered to

during construction, we conclude that the proposed modification is "not likely to adversely affect" the manatee. If the standard protection measures for manatees cannot be implemented for any reason, your agency would be required to reinitiate consultation with the FWS pursuant to section 7 of the ESA.

The National Marine Fisheries Service (NMFS) is responsible for the conservation of federally listed marine sea turtles below the mean high water line. Please contact the NMFS at (813) 893-3503 for any measures they may recommend to conserve listed sea turtles.

Although this does not constitute a Biological Opinion described under section 7 of the ESA, it does fulfill the requirements of the ESA and no further action is required. If modifications are made in the project or if additional information involving potential adverse affects on listed species becomes available, please notify our office.

Thank you for your cooperation in the effort to protect threatened and endangered species and their designated critical habitat. If you have any questions, please contact Chuck Sultzman of our office at (407)562-3909.

Sincerely yours,

Craig Johnson
Supervisor, South Florida Ecosystem Office

cc:
NMFS, Miami, FL
Dade County (DERM), Miami, FL (Attn: Craig Grossenbacher)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. Box 2676
Vero Beach, Florida 32961-2676

IN REPLY REFER TO:

April 23, 1996

Colonel Terry Rice
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Att: Planning Division

RE: Miami Harbor

Dear Colonel Rice:

In accordance with Transfer Fund Agreement RM-CW-95-0112, the Fish and Wildlife Service (FWS) provides the following comments on the above-referenced project. Our comments are submitted in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

The Army Corps of Engineers (COE) proposes to deepen a 400 foot-wide by 1500 foot-long section of an existing navigation channel in Biscayne Bay at the Port of Miami, Dade County, Florida. Dredged material would be deposited at an offshore disposal site. This project was previously planned to include 3,600 feet of navigation channel west of the existing turning basin and would have required dredging in new areas of bay bottom. The project plans have been substantially reduced in scope. The currently proposed project would require dredging an area of submerged bottom which has previously been dredged and is currently serving as an access channel for large ships utilizing the Port of Miami.

The FWS, accompanied by the Dade County Department of Environmental Resources Management (DERM), inspected the project area in August, 1995. The bay bottom in the vicinity of the previously proposed project was densely vegetated with sea grasses. However, no seagrasses are present in the modified project area. In addition, the COE will adhere to state water quality standards and turbidity curtains will be used to protect adjacent seagrass beds from sedimentation. Accordingly, the FWS does not object to the project as proposed. To further protect adjacent resources, the FWS recommends that no vessel associated with project construction drop anchor outside the proposed dredge area.

On February 29, 1996, the FWS provided the COE with comments regarding potential effects of the project on threatened and endangered species. The letter stated that since the standard

construction precautions for the protection of the endangered West Indian manatee (*Trichechus manatus latirostris*) are incorporated into the project plans, the FWS finds that the project is "not likely to adversely affect" the manatee.

Although this does not constitute a Biological Opinion described under section 7 of the ESA, it does fulfill the requirements of the ESA, and no further action is required. If modifications are made to the project or if additional information involving potential impacts on listed species becomes available, reinitiation of consultation may be necessary.

Thank you for this opportunity to provide these comments. This report represents the views of the Department of the Interior. If you require further clarification or assistance, please do not hesitate to contact Charles Sultzman of our office at (407) 562-3909.

Sincerely Yours,

Craig Johnson
Supervisor, South Florida Ecosystem Office

cc:
NMFS, Miami, FL
Dade County DERM, attn: Craig Grossenbacher

AGREEMENT
UNDER SECTION 204(e)
OF PUBLIC LAW 99-662
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
DADE COUNTY, FLORIDA
FOR CONSTRUCTION OF THE
NAVIGATION IMPROVEMENT AT
MIAMI HARBOR
MIAMI, FLORIDA

THIS AGREEMENT is entered into this 1st day of November 1991, by and between the **DEPARTMENT OF THE ARMY** (hereinafter referred to as the "Government"), acting by and through the Assistant Secretary of the Army (Civil Works), and **DADE COUNTY, FLORIDA** (hereinafter referred to as "Dade County"), acting by and through its Board of County Commissioners.

WITNESSETH THAT:

WHEREAS, construction of the navigation project described in a report entitled, "Navigation Study for Miami Harbor Channel, Florida, Feasibility Report and Environmental Impact Statement - 10140" dated October 1988, hereinafter referred to as the "Authorized Project", was authorized pursuant to Section 101(a)(9) of the Water Resources Development Act of 1990 Public Law 101-640; and,

WHEREAS, Section 101 of the Water Resources Development Act of 1986, Public Law 99-662, specifies the cost-sharing requirements applicable to the Project; and,

WHEREAS, Section 204(e) of the Water Resources Development Act of 1986 (33 U.S.C. 2232(e)) authorizes the Secretary of the Army, subject to certain limitations contained therein, to reimburse any non-Federal interest an amount equal to the estimate of the Federal share, without interest, of the cost of an authorized harbor or inland harbor improvement constructed by the non-Federal interest; and,

WHEREAS, Dade County has proposed to construct the Authorized Project in accordance with the Feasibility Report specified above as modified by the Letter Report dated June 24, 1991 which sets forth the alternate disposal method; and,

WHEREAS, the Secretary of the Army finds that the general navigation features of the Authorized Project are economically justified and environmentally acceptable,

NOW THEREFORE, it is agreed between the Government and Dade County that:

Article 1 - Definitions.

For purposes of this Agreement:

a. The term "general navigation features of the Authorized Project" shall mean the following project features assigned to commercial navigation: construction of

1. a channel 500 feet wide and 44 feet deep mean low water elevation (m.l.w.), plus 1 foot allowable overdepth, from Station 0+00 Cut-1 to Station 65+00.61 Cut-2, a distance of approximately 16,500 feet;

2. a Bar-Cut widener 44 feet deep m.l.w., plus 1 foot allowable overdepth, between Station 83+27.98 Cut-1 and Station 39+70 Cut-2;

3. a channel 500 feet wide and 42 feet deep m.l.w., plus 1 foot allowable overdepth, from Station 0+00 Cut-3, to Station 40+21.02 Cut-3, including an irregularly shaped maneuvering area defined by corners at Station 14+25 Range 400 Cut-3, Station 19+00 Range 505 Cut-3, Station 34+00.43 Range 1192.89 Cut-3, Station 35+75.69 Range 823.29 Cut-3, Station 4+55 Range 0 Fisherman's Channel, Station 4+55 Range -100 Fisherman's Channel, and Station 40+21.02 Range 400 Cut-3;

4. a channel 400 feet wide and 42 feet deep m.l.w., plus 1 foot allowable overdepth, from Station 0+00 of Fisherman's Channel to Station 55+55 of Fisherman's Channel;

5. a 1600 foot diameter and 42 feet deep m.l.w. turning basin together with transition channel and wideners connecting with the west end of Fisherman's Channel.

6. Mitigation features: (1) planting of red mangroves on 15 acres in Oleta River State Recreational Area and (2) conducting a two-year monitoring program of the planting.

b. The term "total cost of construction of general navigation features assigned to commercial navigation" shall mean all costs incurred by the Government and all costs incurred by Dade County after Project authorization directly related to construction of the general navigation features of the Authorized Project. Such costs shall include, but not necessarily be limited to: actual construction costs; continuing planning, engineering and design costs incurred after October 1985; review of proposed plans to assure conformity with the requirements for reimbursements under Section 204(e); relocation of highway and railroad bridges; supervision and administrative costs;

inspection and auditing costs; costs of mitigation features; costs of environmental investigations as provided for in Article 21; and costs of contract dispute settlements or awards; but shall not include the value of lands, easements, rights-of-way, and dredged material disposal areas, relocations, dredging of non-Federal public or private channels and berthing areas, and aids to navigation.

c. The term "total project costs" shall mean the total costs of construction of general navigation features plus the value of lands, easements, rights-of-way, relocations and dredged material disposal areas provided for the project by Dade County plus other project features that are included in the authorization document as part of the Federal project or as a non-Federal requirement, the cost of which has been included in the estimate of project costs. This is the current version of the cost estimate used in the benefit costs analysis in the authorization documentation.

d. The term "Contracting Officer" shall mean the Commander of the U.S. Army Engineer District, Jacksonville, or the Commander's designee.

Article 2 - Work to be Accomplished.

Dade County shall construct the entire project as described in the Feasibility Report consisting generally of the following:

a. a channel 500 feet wide and 44 feet deep mean low water elevation (m.l.w.), plus 1 foot allowable overdepth, from Station 0+00 Cut-1 to Station 65+00.61 Cut-2, a distance of approximately 16,500 feet;

b. a Bar-Cut widener 44 feet deep m.l.w., plus 1 foot allowable overdepth, between Station 83+27.98 Cut-1 and Station 39+70 Cut-2;

c. a channel 500 feet wide and 42 feet deep m.l.w., plus 1 foot allowable overdepth, from Station 0+00 Cut-3, to Station 40+21.00 Cut-3, including an irregularly shaped maneuvering area defined by corners at Station 14+25 Range 400 Cut-3, Station 19+00 Range 505 Cut-3, Station 34+00.43 Range 1192.89 Cut-3, Station 35+75.69 Range 823.29 Cut-3, Station 4+55 Range 0 Fisherman's Channel, Station 4+55 Range -100 Fisherman's Channel and Station 40+21.02 Range 400 Cut-3;

d. a channel 400 feet wide and 42 feet deep m.l.w., plus 1 foot allowable overdepth, from Station 0+00 of Fisherman's Channel to Station 55+55 of Fisherman's Channel;

e. a 1600 foot diameter and 42 feet deep m.l.w. turning basin together with transition channel and wideners connecting with the west end of Fisherman's Channel.

f. Mitigation features:

(1) planting of red mangroves on 15 acres in Oleta River State Recreational Area and

(2) conducting a two-year monitoring program of the planting.

g. Berthing areas 100 feet wide and 42 feet deep m.l.w., plus 1-foot allowable overdepth, from Station 0+00 to Station 33+60 Range 0 to Range -100 of Fisherman's Channel.

Article 3 - Review of Design, Detailed Plans and Specifications and Arrangements for Prosecution of the Work by District.

a. No construction of the general navigation features of the project shall commence under this Agreement until the designs, detailed plans and specifications, and arrangements for the prosecution of the work have been approved by the Contracting Officer. Proposed changes in approved designs, plans and specifications also must be reviewed and approved by the Contracting Officer in advance of construction.

b. The review of the design, plans and specifications, and arrangements for prosecution of work shall be reviewed by the Jacksonville District and a telephonic call placed within 20 days verbally advising Dade County of the preliminary assessment of the submitted documents. A letter of approval or a letter identifying remaining issues to be discussed shall be mailed within 30 days after submission of these items by Dade County. All resubmissions by Dade County shall be reviewed and either approved or letter identification of remaining issues identified within 15 days.

c. In the event the Government rejects any plans, or designs submitted by Dade County, the Government shall provide in writing detailed reasons for its rejection of such plans and designs and such reasons shall be submitted to Dade County contemporaneously with any such rejection submitted under this Article.

Article 4 - Method and Manner of Performing the Construction Work.

a. Dade County may pursue the work described in Article 2 with its own work forces, or by construction contract. Dade County shall secure competitive bids by advertising for all construction work to be performed by contract, and shall award to the lowest cost responsible qualified bidder. In the event, Dade County prosecutes the work by construction contract, all bids received and the proposed provisions of any construction contract shall be subject to review and approval by the Government prior to award. Any subsequent construction contract modifications shall be subject to prior review and approval by the Government.

b. The Government shall provide Dade County written approval of all bids and proposed construction contract provisions. Approval or a letter identifying remaining issues to be discussed shall be mailed within 15 days to Dade County. All resubmissions by Dade County shall be reviewed and either approved or letter identification of remaining issues identified within 10 days.

Article 5 - Inspection of Work.

The Government may inspect any work that is performed under this Agreement and Dade County hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon land which Dade County owns or controls for access to the Project for purposes of inspection.

Article 6 - Obligations of Dade County.

Dade County agrees to:

a. Perform the work to be accomplished under the Agreement as described in Article 2.

b. Provide at its expense, all lands, easements, and rights-of-way, including dredged material disposal areas, and perform all relocations or alterations of facilities (other than highway and railroad bridges), as determined to be necessary for construction of the general navigation features of the Authorized Project. The value of such lands and facilities is to be determined in accordance with Article 8 hereof.

c. Provide and maintain at its own expense, all Project features other than the general navigation features of the authorized project.

Article 7 - Basis of Reimbursement.

a. Subject to the limitations described in Article 9, the Government will reimburse Dade County for the Federal share of the total cost of construction of general navigation features assigned to commercial navigation, less all costs incurred by the Government (this deduction of costs is limited to the costs incurred by the Government as part of the total cost of construction of general navigation features as defined by Article 1 b.), necessary for completion of the project (review of plans, inspection of work, etc.). The non-Federal share for the general navigation features equals 25 percent of the actual total cost of construction of the general navigation features of the project, plus an additional 10 percent of such actual costs. The additional 10 percent requirement may be offset by a credit for lands, easements, rights-of-way, and relocations provided by Dade County for the general navigation features of the Authorized Project other than those necessary for upland disposal sites. This credit shall be determined in accordance with Article 8. No costs associated with upland disposal will be credited against the 10 percent additional requirement.

b. The method of disposal of material for the Authorized Project was identified in the Feasibility Report as ocean disposal. In addition, Dade County has identified additional disposal sites in the Letter Report dated June 24, 1991. Dade County may utilize either of these disposal methods; however, if Dade County elects the upland disposal method, reimbursement for costs associated with disposal of dredged material for the general navigation features of the Authorized Project shall not exceed the Federal share of the Government's estimate of costs of ocean disposal. All costs associated with upland disposal of dredged material will be included in total costs of construction of general navigation features except for those costs, if any, in excess of the Government estimate of ocean disposal.

Article 8 - Value of Lands and Facilities.

a. The value of lands, easements, and rights-of-way provided pursuant to Article 6 b. to be credited toward the additional 10 percent of costs of the general navigation features of the Authorized Project will be determined in accordance with the following procedures:

(1) The credit for lands, easements, or rights-of-way shall be the fair market value of the interest at the time such interest is used in the construction of the Project. The fair market value shall be determined by an appraisal, to be obtained by Dade County which has been prepared by a qualified appraiser who is acceptable to both Dade County and the Government. The appraisal shall be reviewed and approved by the Government.

(2) For those lands, easements, or rights-of-way that are acquired by Dade County after the date this Agreement is signed, if Dade County pays an amount in excess of the appraised fair market value, it may be entitled to a credit for the excess, if Dade County has secured prior written approval from the Government of its offer to purchase such interest.

(3) If Dade County acquires more lands, easements, or rights-of-way than are necessary for general navigation purposes, as determined by the Government, then only the value of such portions of those acquisitions as are necessary for general navigation purposes shall be creditable.

(4) Credit for lands, easements, and rights-of-way in the case of involuntary acquisitions made within one year preceding the date this Agreement is signed or any time after the date this Agreement is signed will be based on court awards, or on stipulated settlements that have received prior Government approval.

(5) For lands, easements, or rights-of-way acquired by Dade County within a five year period preceding the date this Agreement is signed, or any time after this Agreement is signed, credits provided under this Article will also include reasonable incidental costs of acquiring the interest, e.g., closing and title costs, appraisal costs, survey costs, attorney's fees, plat maps, and mapping costs, as well as the actual amounts expended for any Public Law 91-646 relocation assistance benefits provided in accordance with the obligations under this Agreement.

b. The costs of relocations or modifications of facilities and utilities (other than highway and railroad bridges) incurred by Dade County to be credited toward the additional 10 percent of total costs of construction of general navigation features assigned to commercial navigation, will be that portion of the actual costs incurred by Dade County as set forth below and approved by the Government:

(1) Highways: Only that portion of the costs as would be necessary to construct substitute highways to the design standard that the State of Florida would use in constructing a new highway under similar conditions of geography and traffic loads.

(2) Facilities and Utilities: Actual relocation costs, less depreciation, less salvage value, plus the cost of removal, less the cost of betterments. With respect to betterments, new materials shall not be used in any relocation or alteration if materials of value and usability equal to those in the existing facility are available or can be obtained as salvage from the existing facility or otherwise, unless the provision of new material is more economical. If, despite the availability of used material, new material is used, where the use of such new

material represents an additional cost, such additional cost will not be creditable.

Article 9 - Limitations on Reimbursement.

a. Reimbursement for the work performed by Dade County shall not take precedence over other pending work at the same or other improvement projects which the Government determines to be of higher priority and shall be subject to the availability of appropriations for the Project.

b. Dade County agrees that it has reviewed the provisions set forth in Section 902 of the Water Resources Development Act of 1986, P.L. 99-662, as amended, and understands the limitation placed on the Government for reimbursement. For the purpose of this Agreement, the Section 902 cost limit is $93,720,000 as calculated on July 1,1991 using October, 1991 price levels and allowances for further inflation. This amount shall be adjusted to allow for appropriate increases for inflation and changes in total project costs as provided in Section 902. Therefore, notwithstanding any other provision of this Agreement, if total project costs computed after bid opening, exceed the limit established by Section 902, the Government will not approve award of the contract. In addition, the Government will not provide any reimbursement if total project costs exceed the Section 902 limit, unless and until the limit is modified by law.

c. Any construction work undertaken by Dade County on the general navigation features of the Authorized Project prior to the effective date of this Agreement shall not be subject to reimbursement.

d. It is understood and agreed that subject to availability of appropriations for this Project, reimbursement for the work comprising usable increment 1 shall occur upon completion and certification of usable increment 1 of the Project and the award of the contracts for usable increment 2. Reimbursement for usable increment 2 shall occur upon completion and certification of that usable increment, subject to the availability of appropriations for this Project. It is agreed that two usable increments exist as described below:

Usable Increment 1 - construction of the following:

1. a channel 500 feet wide and 44 feet deep mean low water elevation (m.l.w.), plus 1 foot allowable overdepth, from Station 0+00 Cut-1 to Station 65+00.61 Cut-2, a distance of approximately 16,500 feet; and

2. a Bar-Cut widener 44 feet deep m.l.w., plus 1 foot allowable overdepth, between Station 83+27.98 Cut-1 and Station 39+70 Cut 2; and

3. a channel 500 feet wide and 42 feet deep m.l.w., plus 1 foot allowable overdepth, from Station 0+00 Cut-3, to Station 40+21.02 Cut-3, including an irregularly shaped manauvering area defined by corners at Station 14+25 Range 400 Cut-3, Station 19+00 Range 505 Cut-3, Station 34+00.43 Range 1192.89 Cut-3, Station 35+75.69 Range 823.29 Cut-3, Station 4+55 Range 0 Fisherman's Channel, Station 4+55 Range -100 Fisherman's channel and Station 40+21.02 Range 400 Cut-3; and

4. a channel 400 feet wide and 42 feet deep m.l.w., plus 1 foot allowable overdepth, from Station 0+00 of Fisherman's Channel to Station 33+60; and

Usable Increment 2 - construction and implementation of the following:

1. a channel 400 feet wide and 42 feet deep m.l.w., plus 1 foot allowable overdepth, from Station 33+60 of Fisherman's Channel to Station 55+55 of Fisherman's Channel; and

2. a 1600 foot diameter and 42 feet deep m.l.w., turning basin together with transition channel and wideners connecting with the west end of Fisherman's Channel; and

3. Mitigation features:

(1) planting of red mangroves on 15 acres of Oleta River State Recreational Area and

(2) conducting a two-year monitoring program of the planting.

e. No reimbursement shall be made until the Secretary of the Army has certified that the work subject to reimbursement has been completed and performed in accordance with applicable permits and approved plans. At any time after completion of physical construction of the work subject to reimbursement, Dade County can request that certification be made, even if there are outstanding claims. In such circumstances, the full costs of any outstanding claims at the time of certification become the responsibility of Dade County.

f. This Agreement shall not be construed as authorizing the Government to assume any responsibilities placed on Dade County or any other non-Federal body by the conditions of project authorization.

g. Reimbursement shall not be made for any work which does not conform to the description set forth in Article 2 above, or approved plans.

h. The amount of reimbursement to Dade County is not subject to adjustment for interest charges, nor is it subject to adjustment to reflect changes in price levels between the dates of completion and reimbursement.

i. Determination of costs eligible for reimbursement will be made in accordance with Office of Management and Budget Circular No. A-87, "Cost Principles of State and Local Governments".

j. No Federal funds may be used to meet Dade County share of project costs under this Agreement unless the expenditure of such funds is expressly authorized by statute as verified in writing by the Federal granting agency.

Article 10 - Operation and Maintenance.

Upon completion of the project, the Government shall operate and maintain the general navigation features of the Authorized Project as required and described in the Report of the Chief of Engineers dated September 25, 1989, as authorized by Congress by Public Law 101-640 (Water Resources Development Act of 1990). Dade County shall provide all lands, easements, rights-of-way, and dredged material disposal areas, and perform all relocations required for project operation and maintenance. Operation and maintenance will remain a Federal responsibility unless the Secretary finds that the Authorized Project is no longer economically justified or environmentally acceptable.

Article 11 - Disputes.

Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or other forms of nonbinding alternative dispute resolution mutually acceptable to the parties.

Article 12 - Release of Claims.

Dade County shall hold and save the Government free from all damages arising from the construction, operation, and maintenance of the Project, except for damages due to the fault or negligence of the Government or its contractors.

Article 13 - Maintenance of Records.

The Government and Dade County shall keep books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total project costs. The Government and Dade County shall maintain such books, records, documents, and other evidence for a minimum of three years after

completion of construction of the project and resolution of all relevant claims arising therefrom, and shall make available at their offices at reasonable times, such books, records, documents, and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

Article 14 - Government Audit.

The Government shall conduct an audit when appropriate of Dade County's records for the Project.

Article 15 - Officials Not to Benefit.

No member of or any delegate to Congress, or Resident Commissioner, or any other public official representing Dade County shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

Article 16 - Covenant Against Contingent Fees.

Dade County warrants that no person or selling agent has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by Dade County for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability or, in its discretion, to subtract from the reimbursement price the full amount of such commission, percentage, brokerage, or contingent fee.

Article 17 - Federal and State Laws.

In acting pursuant to its rights and obligations hereunder, Dade County agrees to comply with all applicable Federal and State laws and regulations, including but not limited to, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646), Section 601 of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and Department of Defense Directive 5500.II issued pursuant thereto and published in part 300 of Title 32, Code of Federal Regulations, as well as Army Regulation 600-7 entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army." In addition, Dade County agrees to apply and include provisions consistent with the following statutes in all construction contracts:

a. Buy American, 41 U.S.C. Section 10a;

b. Clean Air Act, 41 U.S.C. Section 7606;

c. Clean Water Act, 33 U.S.C. Section 1368;

d. Contract Work Hours, 40 U.S.C. Section 327 et. seq.;

e. Convict Labor, 18 U.S. C. Section 4082;

f. Copeland Anti-Kickback, 40 U.S.C. Section 276c;

g. Davis Bacon Act, 40 U.S.C. Section 276, et. seq.;

h. Equal Opportunity, 42 U.S.C. Section 2000d;

i. Jones Act, 46 U.S.C. Section 292;

j. Rehabilitation Act (1973), 29 U.S.C. Section 794;

k. Shipping Act, 46 U.S.C. Section 883;

l. Utilization of Small Business, 15 U.S.C. Section 631, 644;

m. Vietnam Veterans, 38 U.S.C. Section 2012;

n. Walsh-Healey, 41 U.S.C. Section 35, et. seq..

Article 18 - Relationship of Parties.

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this Agreement, and neither party is to be considered the officer, agent, or employee of the other.

Article 19 - Notices.

a. All notices, requests, demands, and other communications required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally, given by prepaid telegram, or mailed by first-class (postage-prepaid), registered, or certified mail, as follows:

If to Dade County: Board of County Commissioners
of Dade County, Florida
Office of the County Manager
Suite 2910
111 N.W. 1st Street
Miami, Florida 33128-1994

If to the Government: U.S. Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, Florida 32232-0019

b. A party may change the address to which such communications are to be directed by giving written notice to the other in the manner provided in this Article.

c. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at such time as it is personally delivered or seven calendar days after it is mailed, as the case may be.

Article 20 - Confidentiality.

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

Article 21 -Hazardous Substances.

a. After execution of this Agreement and upon direction by the Contracting Officer, Dade County shall perform, or cause to be performed, such environmental investigations as are determined necessary by the Government or Dade County to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9601-9675, on lands necessary for construction, operation, and maintenance of the general navigation features of the Project. All actual costs incurred by Dade County which are properly allowable and allocable to performance of any such environmental investigations shall be included in total cost of construction of the general navigation features assigned to commercial navigation and cost shared as a construction cost in accordance with Section 101 of Public Law 99-662.

b. In the event it is discovered through an environmental investigation or other means that any lands, easements, rights-of-way, or disposal areas to be acquired or provided for the Project contain any hazardous substances regulated under CERCLA, Dade County and the Government shall provide prompt notice to each other, and Dade County shall not proceed with the acquisition of lands, easements, rights-of-way, or disposal areas until mutually agreed.

c. The Government and Dade County shall determine whether to initiate construction of the Project, or if already in construction, to continue with construction of the Project, or to terminate construction of the Project, if necessary, in any case

where hazardous substances regulated under CERCLA are found to exist on any lands necessary for the Project. Should the Government and Dade County determine to proceed or continue with construction after considering any liability that may arise under CERCLA, as between the Government and Dade County, Dade County shall be responsible for any and all necessary clean up and response costs, to include the costs of any studies and investigations necessary to determine an appropriate response to the contamination. Such costs shall not be considered a part of total cost of construction of the general navigation features assigned to commercial navigation as defined in this Agreement.

d. Dade County and the Government shall consult with each other to assure that responsible parties bear any necessary cleanup and response costs as defined in CERCLA. Any decision made pursuant to paragraph c of this Article shall not relieve any party from any liability that may arise under CERCLA.

e. Dade County shall perform its responsibilities under this Agreement, including the dredging of berthing areas or access channels and operation and maintenance of any required disposal facilities, in a manner so that liability will not arise under CERCLA.

Article 22 - Expiration of Agreement.

This Agreement shall expire and become null and void if the work described herein is not undertaken within one year of the effective date of this Agreement and completed within nine years thereafter. The two year mitigation monitoring provided for in usable increment 2 will not cause this agreement to become null and void under this Article if such monitoring is in the process of completion.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement which shall become effective upon the date it is signed by the Assistant Secretary of the Army (Civil Works).

THE DEPARTMENT OF THE ARMY

BY: _____
Nancy P. Dorn
Assistant Secretary of the Army
(Civil Works)

DATE: 11/1/91

DADE COUNTY, FLORIDA

BY: _____
Joaquin G. Avino
County Manager
Pursuant to resolution
No. R-770-91 of the
Board of County
Commissioners

DATE: 10-28-91

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

County Manager
Dade County, Florida

DATE: 10-28-91

CERTIFICATE OF AUTHORITY

I, ROBERT A. GINSBURG, do hereby certify that I am the County Attorney for Dade County, Florida and that Dade County, Florida is a legally constituted public body with full authority and legal capability to perform the terms and conditions of the Agreement between the Department of the Army and Dade County, Florida, and to pay damages, if necessary, in the event of the failure to perform in accordance with Section 221 of Public Law 91-611 and that the person(s) who have executed this Agreement on behalf of Dade County, Florida have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certificate this 28 day of OCTOBER 1991.

County Attorney
Dade County, Florida

APPENDIX C

REAL ESTATE

MIAMI HARBOR CHANNEL
DADE COUNTY, FLORIDA
NAVIGATION STUDY
GENERAL REEVALUATION REPORT

REAL ESTATE PLAN

APPENDIX C

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REAL ESTATE PLAN
MIAMI HARBOR CHANNEL
DADE COUNTY, FLORIDA
NAVIGATION STUDY
GENERAL REEVALUATION REPORT

1. **Statement of Purpose.** The purpose of this study was to reevaluate the nature and extent of the navigation problems in the Dodge Island Cut, considering the anticipated future navigation needs of the area. This Real Estate Plan is only for planning purposes and both the final real property acquisition lines and estimates of value are subject to change even after approval of this report.

2. **Project Authorization.** Numerous Acts and Documents since 1902 have authorized a variety of works at Miami Harbor. The current authority for the Miami Harbor Channel Project is in Section 101.a.(9) of the Water Resources Development Act of 1990 (PL 101-640, dated 28 November 1990) in accordance with the Report of the Chief of Engineers, dated 25 September 1989.

3. **Project Location.** Miami Harbor is located in Biscayne Bay near the southern end of the Florida Peninsula. The city of Miami is on the western shore of the Bay. The bay is 38 miles in length by 3 to 9 miles in width and is separated from the Atlantic Ocean by a peninsula and chain of islands. Two artificial cuts, Bakers Haulover Inlet and Government Cut as well as several shallow natural passages connect the bay with the ocean. Government Cut, near the south end, forms the entrance to the main ship channel to the Harbor.

4. **Project Description.**

a. The existing Federal project for Miami Harbor navigation features consists of an entrance channel, interior channels, turning basins, two protective jetties and berthing areas. The reevaluation is at the request of local interests.

b. Based on the project description in House Document 205, 101st Congress, 1st Session, dated 21 June 1990, a modified project has been designed and is proposed as deepening a channel with an approximate length of 1,200 feet from the authorized Federal turning basin west along the south side of Dodge Island.

5. Government-Owned Land. There exists 905.32 acres of Federally-held spoil area, pipeline, and right-of-way easements within the Miami Harbor project area.

6. Non-Federally-Owned Land. There exists Sponsor-Owned land within the project area. The sponsor is the Miami Port Authority.

7. Real Estate Requirements. There are no uplands required for this project. Access to the project area will be by water and off-shore disposal areas will be used. These lands are within the navigable waters of the United States and are available to the Federal Government directly.

8. Non-Federal Operation/Maintenance Responsibilities.

a. The Local Sponsor shall provide and maintain, at its own expense, all project features other than those for general navigation, including dredged depths commensurate with those in related general navigation features in berthing areas and local access channels serving the general navigation features.

b. The Local Sponsor shall provide to the Government all lands, easements, and rights-of-way, including dredged material disposal areas, and perform, or assure performance of, all alterations or relocations of facilities and utilities (except relocations or alterations of highway bridges and railroad bridges and approaches thereto), determined by the Government to be necessary for maintenance of the Project.

9. Non-Federal Authority to Participate in the Project. The local sponsor, the Port of Miami, derived its authority to participate in the project through its creation by Act of the Legislature of the State of Florida, Chapter 63-1447, Laws of Florida. The Port Authority has experience in land acquisition. The Non-Federal Sponsor has participated in numerous federally sponsored projects.

10. Appraisal Information. Since there are no lands to value for this project, no appraisal is required.

11. Attitude of Owners. There are no private property owners directly affected by the federal project.

12. Minerals. There are no known minerals of value in the project area.

13. Hazardous and Toxic Wastes (HTW). In accordance with Engineering Regulation (ER) 1165-2-132, Hazardous, Toxic and Radioactive Waste (HTRW) Guidance for Civil Works Projects, assessments appropriate for this project have been completed.

14. Relocations Assistance (Public Law 91-646). There are no persons or businesses to be relocated due to project implementation.

15. Relocations, Alterations, Vacations and Abandonments. There are no known utilities, structures and facilities, cemeteries or towns to be affected as part of the federal project. No governmental structures or facilities that come within the purview of Section 111 of the Rivers and Harbors Act of 1958 (PL 85-500) approved 3 July 1958 will be affected by the project.

16. Standing Timber and Vegetative Cover. There exist no timber or unusual vegetative cover in the project area.

17. Recreation Resources. There are no separable recreational lands identified for the project.

18. Cultural Resources. There are no known cultural resources identified as being affected by the project.

19. Outstanding Rights. There are no known outstanding rights in the project area.

20. Mitigation. There are no lands required for mitigation.

21. Acquisition/Administrative Costs.

(1) The estimate of the Federal administrative cost is $4,000.

(2) The non-Federal sponsor will receive credit towards its share of administrative project costs incurred for providing temporary permits or licenses, if any. This administrative cost is estimated to be $1,000.

22. Summary of Project Real Estate Costs.

Lands:		
Improvements:	0	
Severance Damages:	0	
Minerals:	0	
Total Lands and Damages		0
Acquisition/Administrative		
Federal		4,000
Non-Federal		1,000
Public Law 91-646		0
Contingency		1,000
Total Real Estate Costs (including contingency)		**6,000**

23. Real Estate Acquisition Schedule. Due to the requirements of this Project, there is no scheduled acquisition of real estate.

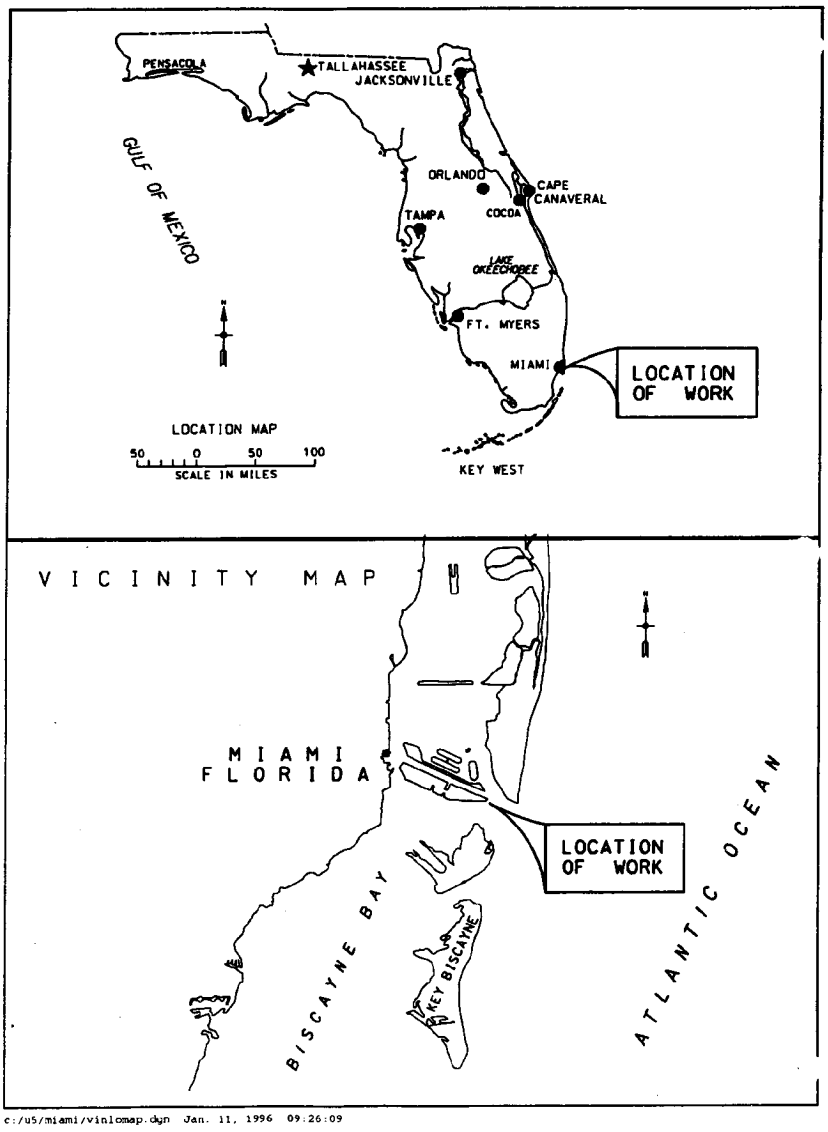
24. Estates to be Acquired. There are no estates to be acquired for this project.

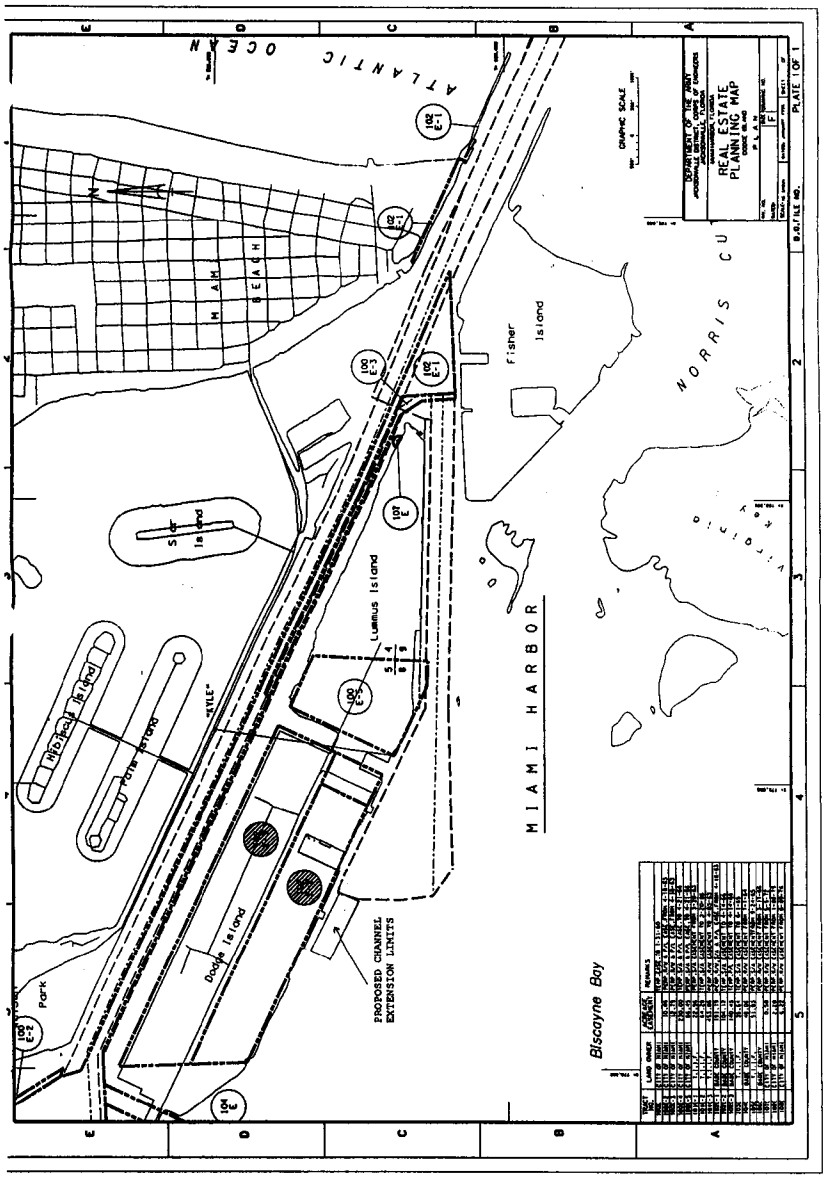
25. Maps. A vicinity map and project map are provided following this Appendix.

ESTIMATED PROJECT REAL ESTATE COSTS
PROJECT: Miami Harbor, Dodge Island

DATE: 5 January 1996

01	LANDS AND DAMAGES		
01AA	PROJECT PLANNING		$3,000
01B--	ACQUISITIONS		
01B20	BY LOCAL SPONSOR (LS)		$0
01B40	REVIEW OF LS		$0
01C--	CONDEMNATIONS		
01C20	BY LS		$0
01C40	REVIEW OF LS		$0
01E--	APPRAISALS		
01E30	BY LS		$0
01E50	REVIEW OF LS		$0
01F--	PL 91-646 ASSISTANCE		
01F20	BY LS		$0
01F40	REVIEW OF LS		$0
01G--	TEMPORARY PERMITS/LICENSES/RIGHTS-OF-ENTRY		
01G20	BY LS		$1,000
01G40	REVIEW OF LS		
01G60	DAMAGE CLAIMS		$0
01M00	PROJECT RELATED ADMINISTRATION		
	REAL ESTATE REVIEW OF PCA		$1,000
01R--	REAL ESTATE PAYMENTS		
01R10	LAND PAYMENTS		
01R1B	BY LS		$0
01R2	PL 91-646 ASSISTANCE PAYMENTS		
01R2B	BY LS		$0
TOTAL REAL ESTATE COST EXCLUDING CONTINGENCY			$5,000
REAL ESTATE CONTING COST (25% RD)		$1,000	
TOTAL PROJECT REAL ESTATE COST (RD)			**$6,000**


PENSACOLA
TALLAHASSEE
JACKSONVILLE
GULF OF MEXICO
ORLANDO
CAPE CANAVERAL
COCOA
TAMPA
LAKE OKEECHOBEE
FT. MYERS
MIAMI
LOCATION OF WORK
LOCATION MAP
50 0 50 100
SCALE IN MILES
KEY WEST
VICINITY MAP
MIAMI FLORIDA
LOCATION OF WORK
BISCAYNE BAY
KEY BISCAYNE
ATLANTIC OCEAN
c:/u5/miami/vinlomap.dgn Jan. 11, 1996 09:26:09


ATLANTIC OCEAN
MIAMI BEACH
Fisher Island
NORRIS CU
MIAMI HARBOR
Biscayne Bay
Dodge Island
Lummus Island
"KYLE"
PROPOSED CHANNEL EXTENSION LIMITS
REAL ESTATE PLANNING MAP
PLATE 1 OF 1

APPENDIX D

FDER PERMITS

Date 7-11-80

N TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

July 11, 1980

Metropolitan Dade County Seaport Department
Post, Buckley, Schuh & Jernigan, Inc.
C/O Luis Ajamil, P.E.
7500 Northwest 52nd Street
Miami, Florida 33168

Dear Mr. Ajamil:

Enclosed is Permit Number 13-19502, dated 7-11-80
to dredge & fill & construct, the subject pollution source, issued
pursuant to Section 253 & 403, Florida Statutes

Should you object to this permit, including any and all of the conditions contained therein, you may file an appropriate petition for administrative hearing. This petition must be filed within fourteen (14) days of the receipt of this letter. Further, the petition must conform to the requirements of Section 28-5.15, Florida Administrative Code, (copy enclosed). The petition must be filed with the Office of General Counsel, Department of Environmental Regulation, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, Florida, 32301.

If no petition is filed within the prescribed time, you will be deemed to have accepted this permit and waived your right to request an administrative hearing on this matter.

Acceptance of the permit constitutes notice and agreement that the Department will periodically review this permit for compliance, including site inspections where applicable, and may initiate enforcement action for violation of the conditions and requirements thereof.

Sincerely,

Jeremy A. Craft
Section Administrator
Standard Permitting Section

RULES OF THE ADMINISTRATION COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

PART II
FORMAL PROCEEDINGS

28-5.201 Initiation of Formal Proceedings.

(1) Initiation of formal proceedings shall be made by petition to the agency responsible for rendering final agency action. The term petition as used herein includes any application or other document which expresses a request for formal proceedings. Each petition should be printed, typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners, and an explanation of how his/her substantial interests will be affected by the agency determination;

(c) A statement of when and how petition r received notice of the agency decision or intent to render a decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief;

(f) A demand for relief to which the petitioner deems himself entitled; and

(g) Other information which the petitioner contends is material.

****

A petition may be denied if the petitioner does not state adequately a material factual allegation, such as a substantial interest in the agency determination, or if the petition is untimely. (Section 28-5.201(3)(a), FAC)

OFFERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: Metropolitan Dade County Seaport Department
Post, Buckley, Schuh & Jernigan, Inc.
c/o Luis Ajamil, P.E.
7500 Northwest 52nd Street
Miami, Florida 33166

PERMIT/CERTIFICATION
NO. 13-19502

COUNTY: Dade

PROJECT: Biscayne Bay, Miami

issued under the provisions of Chapters 253 and 403 [illegible] Florida Statutes, and Chapter 17-4 [illegible] Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to [illegible] the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and [illegible] a part hereof and specifically described as follows:

To enlarge and improve the existing port by dredging approximately 11,400,000 [illegible]ic yards of material for channels, slips, and turning basins and connecting [illegible]ge Island with Lummis Island and Sam's Island with approximately 5,020,000 [illegible]ic yards of spoil and placing the remaining spoil on a diked upland spoil [illegible]e on Virginia Key and replacing an 8 inch water main with a 20 inch water [illegible]n and placing a 500 ft. long by 20 inch diameter pipe, a 500 ft. long by 10 [illegible]n diameter pipe, and a 500 ft. long by a 6 inch diameter pipe in accordance [illegible]n Exhibits 1-18 of 18.

LOCATION: Biscayne Bay, Miami, Dade County, Sections 4, 5, 6, 8 and 9; Township 53 [illegible]54 South; Range 42 East, Aquatic Preserve, Class III Waters.

PERMIT NO.: 13-19502
APPLICANT: Metropolitan Dade County Seaport Department

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions", and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations indicated in the attached drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit shall constitute grounds for revocation and enforcement action by the department.

3. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. Recording this permit, the permitted documents and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is prescribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purpose of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

13. This permit also constitutes:

[ ] Determination of Best Available Control Technology (BACT)
[ ] Determination of Prevention of Significant Deterioration (PSD)
[X] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: 13-19502
APPLICANT. Metropolitan Dade County Seaport Department

SPECIFIC CONDITIONS:

1. Turbidity curtains and haybales, or other erosion control devices shall be in place during dredging around the perimeters of the spoil areas to prevent turbidity in excess of State Water Quality Standards.

2. The areas outside of the dredge and spoil areas shall be monitored hourly for turbidity. If violations occur the Department shall be notified and monitoring shall be increased to half-hourly. If violations persist the applicant shall shut the project down.

3. The areas of seagrass transplantation and mangrove and upland restoration shall be monitored in accordance with an approved vegetative restoration plan. This monitoring shall be long-term, conducted by an independent firm or agency, and at the expense of the applicant.

4. Every attempt shall be made by the applicant to utilize impacted vegetation for restoration.

5. The applicant shall submit a plan for adequate stormwater treatment and retention to compensate for increased port usage to prevent degradation of waters of the State by oils and greases, heavy metals, and coliform.

6. Sewage pump-out facilities connected to an approved treatment facility shall be provided.

7. Bilge pump-out facilities connected to an approved treatment facility shall be provided.

8. An oil spill contingency plan incorporating methods and equipment of prevention, containment, and control shall be provided.

9. All fueling facilities shall be equipped with automatic cut-off valves.

MONITORING REQUIRED:

Description	Frequency	Location
Turbidity at surface, mid-depth, and 1 ft. above the bottom.	Hourly	1. 50 feet from the spoil effluent discharge site in any visible plume. 2. 50 feet from the dredge cutterhead in any visible plume. 3. 50 feet outside of the perimter of the spoil fill area in any visible

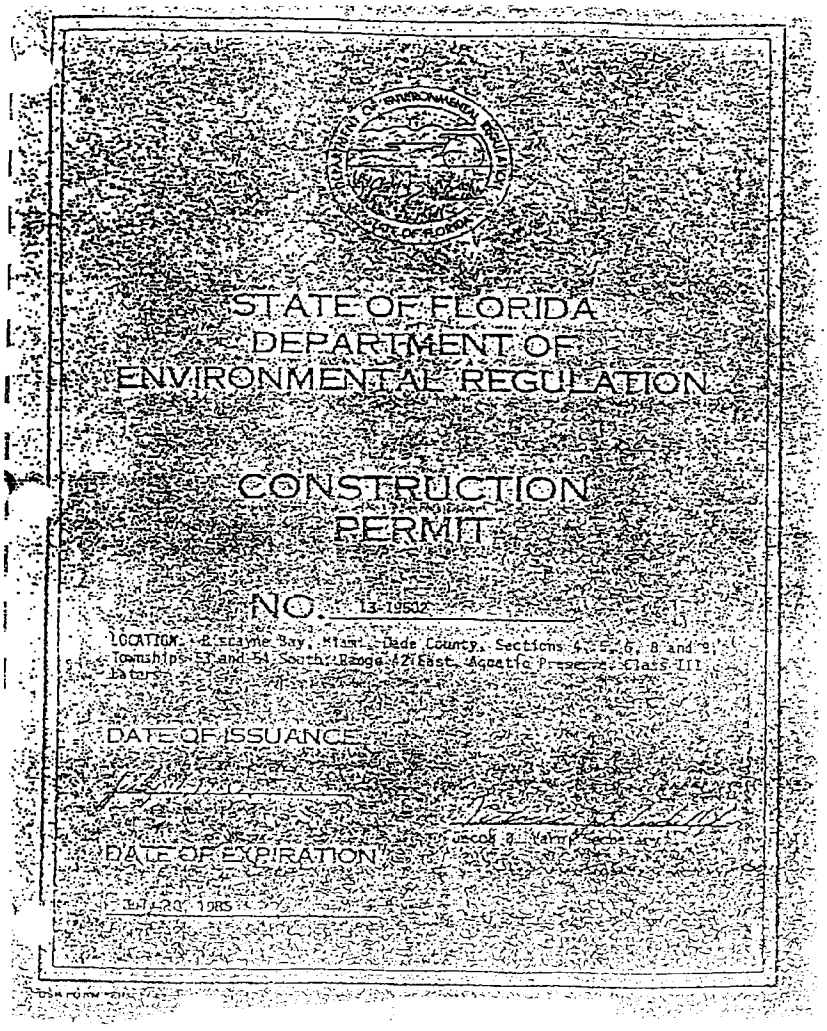
If monitoring reveals apparent violations of State Water Quality Standards for turbidity, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. Any such occurrence shall also be immediately reported to the Department of Environmental Regulation South Florida Subdistrict Office in West Palm Beach and to the Dade County Environmental Resources Management. Monitoring reports shall be submitted under a cover letter containing the following information: (1) permit number; (2) a statement describing the methods used in collection, handling, storage, and analysis of the samples; (3) a map indicating the sampling locations; and (4) a statement by the individual responsible for implementation of the monitoring program concerning the authenticity, precision, and accuracy of the data. Monitoring reports shall be submitted to the Bureau of Permitting in Tallahassee and to the Department of Environmental Regulation South Florida Subdistrict Office in West Palm Beach. Failure to submit reports in a timely manner constitutes grounds for revocation of the permit.

Expiration Date: July 10, 1985

_____ Pages Attached.

Issued this 11 day of July, 1980.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
Jacob D. Varn, Secretary



STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

CONSTRUCTION
PERMIT

NO. 13-19512

LOCATION: Biscayne Bay, Miami, Dade County, Sections 4, 5, 6, 8 and 9, Township 53 and 54 South, Range 42 East, Aquatic Preserve, Class III Water

DATE OF ISSUANCE

Jacob D. Varn, Secretary

DATE OF EXPIRATION

July 20, 1985

FDER PERMIT
131106409
dated March 7, 1986

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

May 12, 1986

Metro-Dade Seaport Department
c/o Luis Ajamil
Post, Buckley, Schuh and Jernigan, Inc.
6850 S. W. 40th Street
Miami, Florida 33155

Dear Mr. Ajamil:

Permit No. 131106409, Dade County
Port of Miami Expansion

Your request to modify this permit has been received and reviewed by Department staff. The modification is for changing the expiration date on the permit from March 7, 1991 to March 7, 2001. The applicant applied for a 15-year permit and the date on the original permit was incorrect.

Six new drawings were submitted which show minor revisions in construction details from the original permit drawings. These new signed and sealed copies were not available at the time the permit was issued. These revisions include:

1. A widener in the south channel south of Dodge Island, encompassing Little Island;

2. Creation of a -6 ft. slip in the south channel at Lummus Island for the pilot boat; and,

3. Installation of dolphin piles adjacent to Miamarina.

Sheet 2A of 20 shows those maintenance areas which still need to be dredged.

Since the proposed modifications are not expected to result in any adverse environmental impact or water quality degradation, the permit is hereby modified as requested. By copy of this letter and the attached drawings, we are notifying all necessary parties of the modifications.

This letter of approval does not alter the Specific or General Conditions, or monitoring requirements of the permit. This letter and accompanying drawings must be attached to the original permit.

This letter constitutes final agency action unless a person substantially affected by this action requests an administrative hearing pursuant to Section 120.57, Florida Statutes. The petition must be filed within fourteen (14) days from receipt of this letter. The petition must comply with the requirements of Florida Administrative Code Rule 28-5.201 and be filed pursuant to Rule 17-103.155(1) in the Office of General Counsel of the Department of Environmental Regulation at 2600 Blair Stone Road, Tallahassee, Florida 32301-8241. Petitions which are not filed in accordance with the above provisions will not be accepted by the Department. If a formal proceeding pursuant to Section 120.57(1) is requested, at such formal hearing all parties shall have an opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination of witnesses and submit rebuttal evidence, to submit proposed findings of facts and orders, to file exceptions to any order or hearing officer's recommended order, and to be represented by counsel. If an informal proceeding is requested, the agency will, in accordance with its rules of procedure, give affected persons or parties or their counsel an opportunity, at a convenient time and place, to present to the agency or hearing officer written or oral evidence in opposition to the agency's action or refusal to act, or a written statement challenging the grounds upon which the agency has chosen to justify its action or inaction, pursuant to Section 120.57(2), Florida Statutes. The hearing process is designed to formulate agency action. Accordingly, the Department's final action as a result of a hearing may be different from the position taken by it in this stage. Therefore, any person who may wish to contest the Department's ultimate permitting decision must petition for hearing within the fourteen day period described above. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request a hearing under Section 120.57, Florida Statutes.

Sincerely,

Randall L. Armstrong, Chief
Bureau of Permitting

RA/KLB/jy

Enclosure

cc: DER, Southeast District
DNR, Marine Patrol
Florida Game and Fresh Water Fish Commission
U. S. Army Corps of Engineers, Jacksonville
Charles Horne, DNR, State Lands

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Metropolitan Dade County
Seaport Department
1015 North America Way
Miami, Florida 33131

Permit Number: 131106409
Date of Issue: 03-07-86
Expiration Date: 03-07-91
County: Dade
Project: 15-Year; New Work

This permit is issued under the provisions of Chapter 403, Florida Statutes, Public Law 92-500, and Florida Administrative Code Rules 17-3, 17-4 and 17-12. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

PROJECT DESCRIPTION:

To enlarge and improve the existing port of Miami by: dredging approximately 7,000,000 cubic yards of material for channels, slips, and turning basins and connecting Dodge Island with Lummis Island and Sam's Island with approximately 5,020,000 cubic yards of spoil and placing the remaining spoil on a diked upland spoil site on Virginia Key and replacing an 8-inch water main with a 20-inch water main and placing a 500 ft. long by 20 inch diameter pipe, a 500 ft. long by 10 inch diameter pipe, and a 500 ft. long by a 6 inch diameter pipe in accordance with Exhibits 1-18 of 18; and, by constructing a high level bridge just north of the existing roadway between the mainland and Dodge Island.

LOCATION:

Biscayne Bay, Dade County, Sections 4, 5, 6 and 8, Township 53 South and 54 South, Range 42 East, Biscayne Bay Aquatic Preserve, Class III waters.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Turbidity curtains and haybales, or other erosion control devices shall be in place during dredging around the perimeters of the spoil areas to prevent turbidity in excess of State Water Quality Standards.

2. The areas outside of the dredge and spoil areas shall be monitored hourly for turbidity. If violations occur the Department shall be notified and monitoring shall be increased to half-hourly. If violations persist the applicant shall shut the project down.

SPECIFIC CONDITIONS:

3. The areas of seagrass transplantation and mangrove and upland restoration shall be monitored in accordance with an approved vegetative restoration plan. This monitoring shall be conducted according to the plan worked out in accordance with the U.S. Army Corps of Engineers.

4. The applicant shall submit a plan for adequate stormwater treatment and retention to compensate for increased port usage to prevent degradation of waters of the State by oils and greases, heavy metals, and coliform.

5. Sewage pump-out facilities connected to an approved treatment facility shall be provided.

6. Bilge pump-out facilities connected to an approved treatment facility shall be provided.

7. An oil spill contingency plan incorporating methods and equipment of prevention, containment, and control shall be provided.

8. All fueling facilities shall be equipped with automatic cut-off valves.

9. The diked spoil disposal areas shall be monitored to see that at no time during disposal shall any effluent be allowed to overtop the diked area and spill out. As soon as the effluent within the diked area rises to 2 ft. below the top of the dike, pumping shall cease until the material has settled to at least 5 ft. below the top of the dike. If material tops the dike all operations shall cease immediately. The DER Bureau of Permitting in Tallahassee and the DER Subdistrict Office in West Palm Beach shall be notified as soon as possible. Work shall not be resumed until a field inspection by DER personnel has been conducted and written authorization received from DER that dredging and disposal may continue.

10. All disposal in the Virginia Key site shall occur in the area furthest away and opposite from the adjustable weirs. When this section of the disposal area is filled operations shall shift to the opposite side of the disposal area, the existing weirs shall be closed, and new weirs of the same design shall be installed on the opposite side of the diked disposal area.

MONITORING REQUIRED:

Description: Turbidity at surface, mid-depth, and 1 ft. above the bottom.

Frequency: Hourly

Location: 1. 50 feet from the spoil effluent discharge site in any visible plume.

2. 50 feet from the dredge cutterhead in any visible plume.

3. 50 feet outside of the perimeter of the spoil fill area in any visible plume.

If monitoring reveals apparent violations of State Water Quality Standards for turbidity, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. Any such occurrence shall also be immediately reported to the Department of Environmental Regulation South Florida Subdistrict Office in West Palm Beach and to the Dade County Environmental Resources Management. Monitoring reports shall be submitted under a cover letter containing the following information: (1) permit number; (2) a statement describing the methods used in collection, handling, storage, and analysis of the samples; (3) a map indicating the sampling locations; and (4) a statement by the individual responsible for implementation of the monitoring program concerning the authenticity, precision, and accuracy of the data. Monitoring reports shall be submitted to the Bureau of Permitting in Tallahassee and to the Department of Environmental Regulation South Florida Subdistrict Office in West Palm Beach. Failure to submit reports in a timely manner constitutes grounds for revocation of the permit.

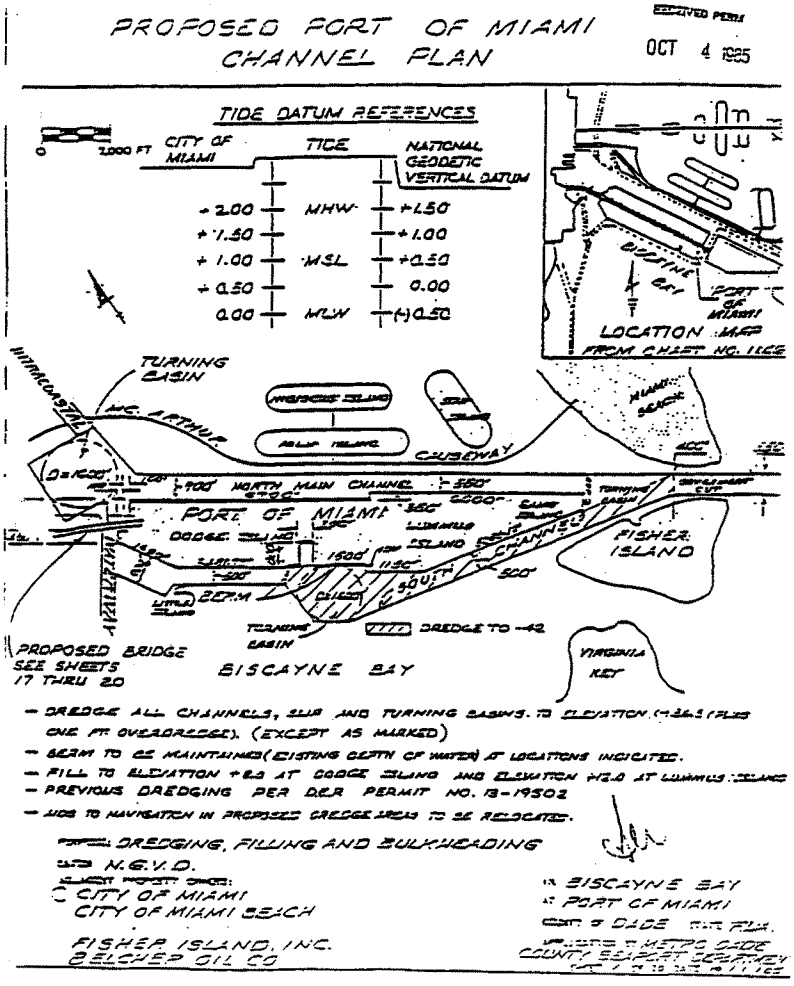
Recommended by _____.

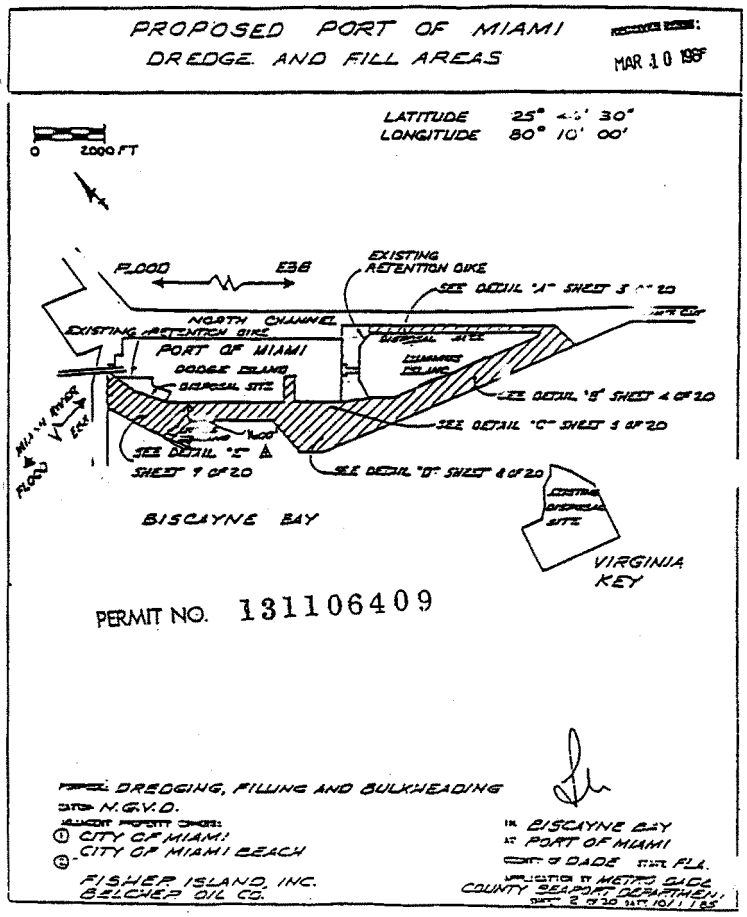
Issued this 7 day of March, 1986.

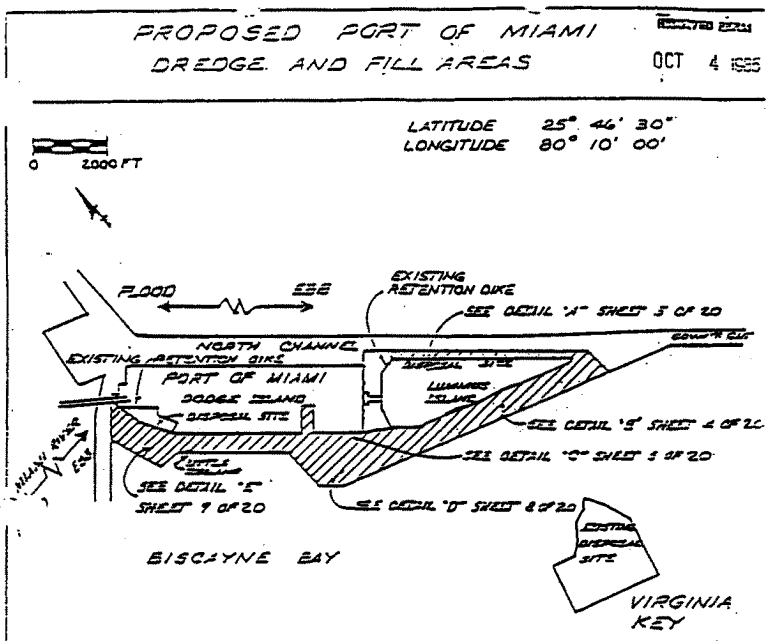
STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

Victoria J. Tschinkel
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.


PROPOSED PORT OF MIAMI
CHANNEL PLAN
RECEIVED PERM
OCT 4 1985
TIDE DATUM REFERENCES
CITY OF MIAMI
TIDE
NATIONAL GEODETIC VERTICAL DATUM
+2.00 MHW +1.50
+1.50 +1.00
+1.00 MSL +0.50
+0.50 0.00
0.00 MLW (-)0.50
LOCATION MAP
FROM CHART NO. 11466
TURNING BASIN
MC. ARTHUR
CAUSEWAY
NORTH MAIN CHANNEL
PORT OF MIAMI
DODGE ISLAND
LUMMUS ISLAND
CHANNEL
FISHER ISLAND
SOUTH
PROPOSED BRIDGE
SEE SHEETS
17 THRU 20
BISCAYNE BAY
DREDGE TO -42
VIRGINIA KEY
- DREDGE ALL CHANNELS, SLIP AND TURNING BASINS TO ELEVATION (-)36.5 (PLUS ONE FT OVERDREDGE). (EXCEPT AS MARKED)
- BERM TO BE MAINTAINED (EXISTING DEPTH OF WATER) AT LOCATIONS INDICATED.
- FILL TO ELEVATION +8.0 AT DODGE ISLAND AND ELEVATION +12.0 AT LUMMUS ISLAND
- PREVIOUS DREDGING PER DER PERMIT NO. 13-19502
- AIDS TO NAVIGATION IN PROPOSED DREDGE AREAS TO BE RELOCATED.
PROPOSED: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO
IN BISCAYNE BAY
AT PORT OF MIAMI
DADE COUNTY, FLA.
DADE COUNTY SECRETARY


PROPOSED PORT OF MIAMI
DREDGE AND FILL AREAS
MAR 10 198
LATITUDE 25° 45' 30"
LONGITUDE 80° 10' 00"
0 2000 FT
FLOOD
EBB
EXISTING RETENTION DIKE
SEE DETAIL "A" SHEET 3 OF 20
NORTH CHANNEL
EXISTING RETENTION DIKE
PORT OF MIAMI
DODGE ISLAND
DISPOSAL SITE
DISPOSAL AREA
LUMMUS ISLAND
SEE DETAIL "B" SHEET 4 OF 20
SEE DETAIL "C" SHEET 3 OF 20
SEE DETAIL "E" SHEET 9 OF 20
SEE DETAIL "D" SHEET 8 OF 20
MIAMI RIVER ENT.
FLOOD
BISCAYNE BAY
CONTAINER DISPOSAL SITE
VIRGINIA KEY
PERMIT NO. 131106409
DREDGING, FILLING AND BULKHEADING
N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
SHEET 2 OF 20 DATE 10/1/85



DREDGING, FILLING AND BULKHEADING

DATUM N.G.V.D.

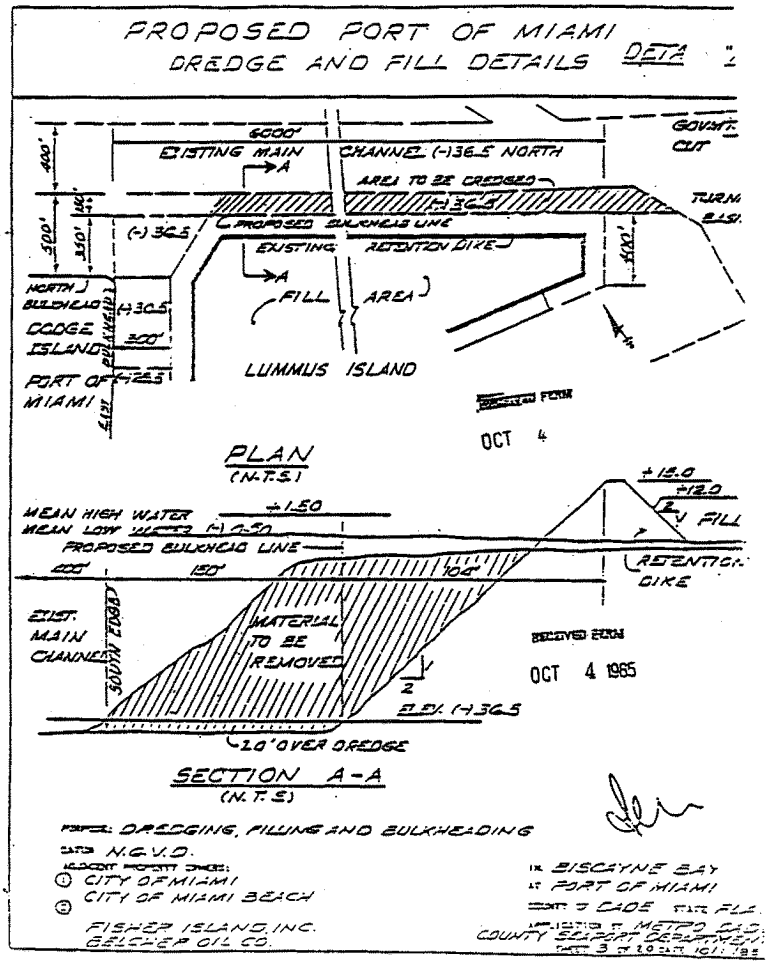
ADJACENT PROPERTY OWNERS:

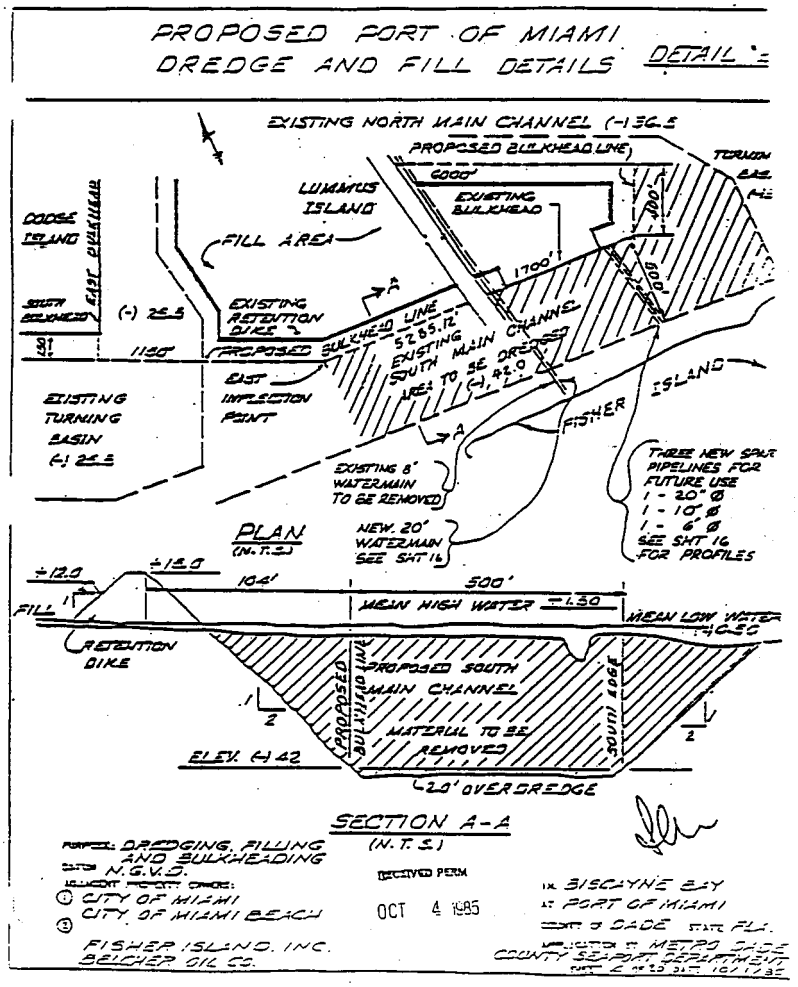
1. CITY OF MIAMI
2. CITY OF MIAMI BEACH
3. FISHER ISLAND, INC.
4. BELCHER OIL CO.

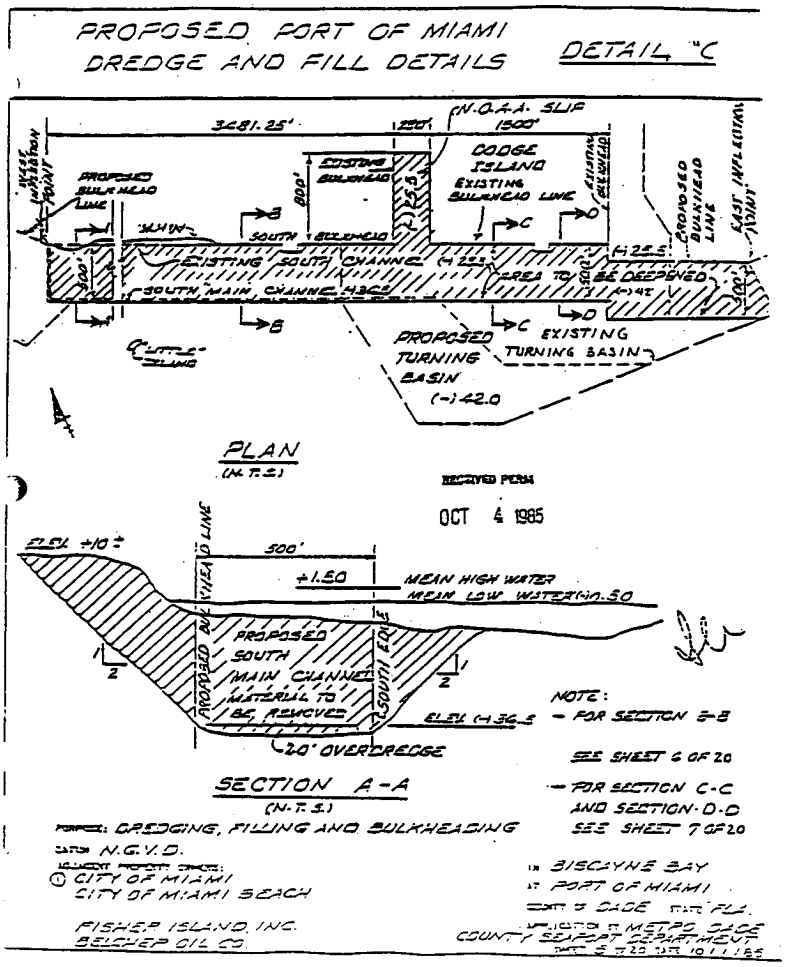
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY DADE STATE FLA.

APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
DATE RECEIVED 10/1/85

PERMIT NO. [illegible]

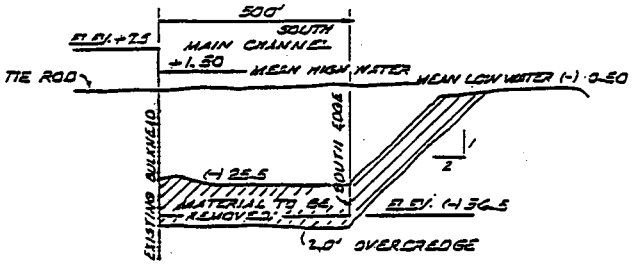

PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
6000'
EXISTING MAIN CHANNEL (-)36.5 NORTH
AREA TO BE DREDGED
GOVMT. CUT
PROPOSED BULKHEAD LINE
EXISTING RETENTION DIKE
FILL AREA
LUMMUS ISLAND
NORTH JETTY
FOOR ISLAND
PORT OF MIAMI
OCT 4
PLAN
(N.T.S.)
MEAN HIGH WATER +1.50
MEAN LOW WATER (-)0.50
PROPOSED BULKHEAD LINE
+12.0
FILL
RETENTION DIKE
EXIST. MAIN CHANNEL
SOUTH JETTY
MATERIAL TO BE REMOVED
OCT 4 1965
ELEV. (-)36.5
2.0' OVER DREDGE
SECTION A-A
(N.T.S.)
DREDGING, FILLING AND BULKHEADING
N.G.V.D.
CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND, INC.
GELCHER OIL CO.
BISCAYNE BAY
PORT OF MIAMI
DADE
METRO DADE COUNTY SEAPORT DEPARTMENT


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL 'E'
EXISTING NORTH MAIN CHANNEL (-) 36.5
PROPOSED BULKHEAD LINE
TURNING BAS.
LUMMUS ISLAND
EXISTING BULKHEAD
6000'
700'
FILL AREA
1700'
800'
DODGE ISLAND
EAST CHANNEL
SOUTH BULKHEAD
(-) 26.5
EXISTING RETENTION DIKE
PROPOSED BULKHEAD LINE
S 285.12'
EXISTING SOUTH MAIN CHANNEL
AREA TO BE DREDGED (-) 42.0
1130'
EAST INFLECTION POINT
EXISTING TURNING BASIN (-) 26.5
ISLAND
FISHER
EXISTING 8" WATERMAIN TO BE REMOVED
THREE NEW SPUR PIPELINES FOR FUTURE USE
1 - 20" Ø
1 - 10" Ø
1 - 6" Ø
SEE SHT 16 FOR PROFILES
PLAN
(N.T.S.)
NEW 20" WATERMAIN SEE SHT 16
+12.0
+12.0
10.4'
500'
FILL
MEAN HIGH WATER +1.50
MEAN LOW WATER +0.50
RETENTION DIKE
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL
SOUTH EDGE
MATERIAL TO BE REMOVED
ELEV. (-) 42
20' OVERDREDGE
SECTION A-A
(N.T.S.)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
APPLICANT: CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
RECEIVED PERM
OCT 4 1985
IN BISCAYNE BAY
AT PORT OF MIAMI
DADE STATE FLA.
METRO DADE COUNTY SEAPORT DEPARTMENT


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "C
(N.O.A.A. SLIP
1500'
3481.25'
COOGE
ISLAND
EXISTING
BULKHEAD LINE
PROPOSED
BULK HEAD
LINE
EXISTING
BULKHEAD
800'
SOUTH BULKHEAD
EXISTING SOUTH CHANNEL
SOUTH MAIN CHANNEL
AREA TO BE DEEPENED
PROPOSED
TURNING
BASIN
(-)42.0
EXISTING
TURNING BASIN
PLAN
(N.T.S.)
RECEIVED FCRM
OCT 4 1985
EL.EX. +10 ±
300'
+1.50
MEAN HIGH WATER
MEAN LOW WATER(-)0.50
PROPOSED
SOUTH
MAIN CHANNEL
MATERIAL TO
BE REMOVED
PROPOSED BULKHEAD LINE
SOUTH EDGE
EL.EX. (-)36.5
20' OVERDREDGE
SECTION A-A
(N.T.S.)
NOTE:
- FOR SECTION B-B
SEE SHEET 6 OF 20
- FOR SECTION C-C
AND SECTION D-D
SEE SHEET 7 OF 20
DREDGING, FILLING AND BULKHEADING
N.G.V.D.
CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
DADE COUNTY, FLA.
METRO DADE
COUNTY SEAPORT DEPARTMENT

PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS

DETAIL "C"



SECTION B-B
(N.T.S.)

FOR LOCATION & NOTES
SEE SHEET 5 of 20

RECEIVED
OCT 4 1985

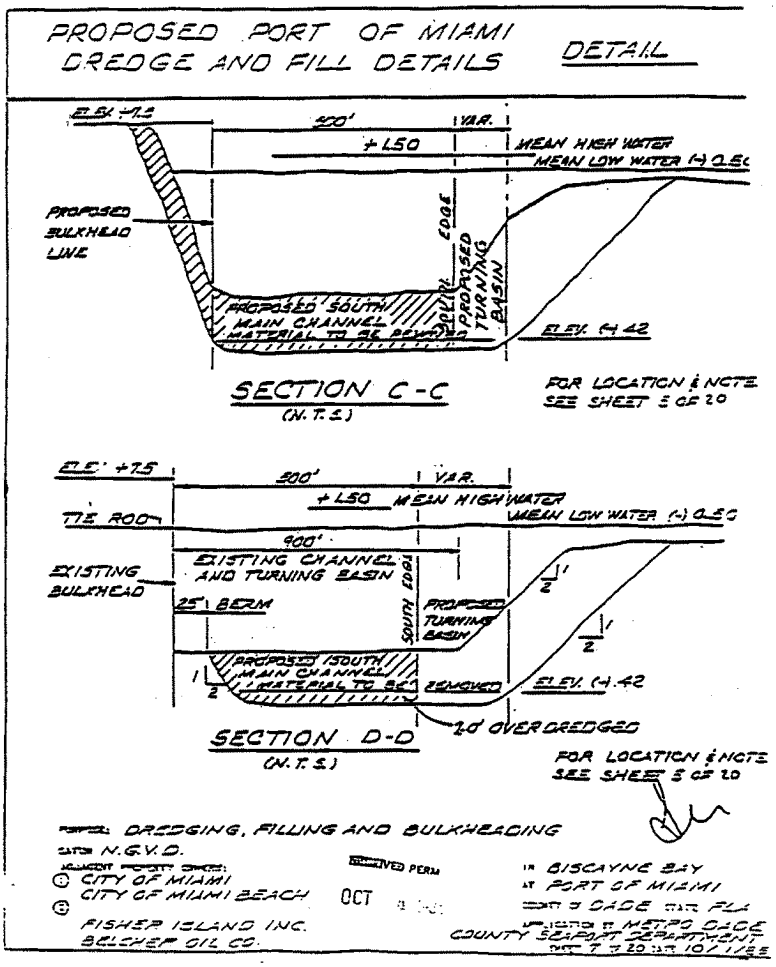
PURPOSE: DREDGING, FILLING AND BULKHEADING

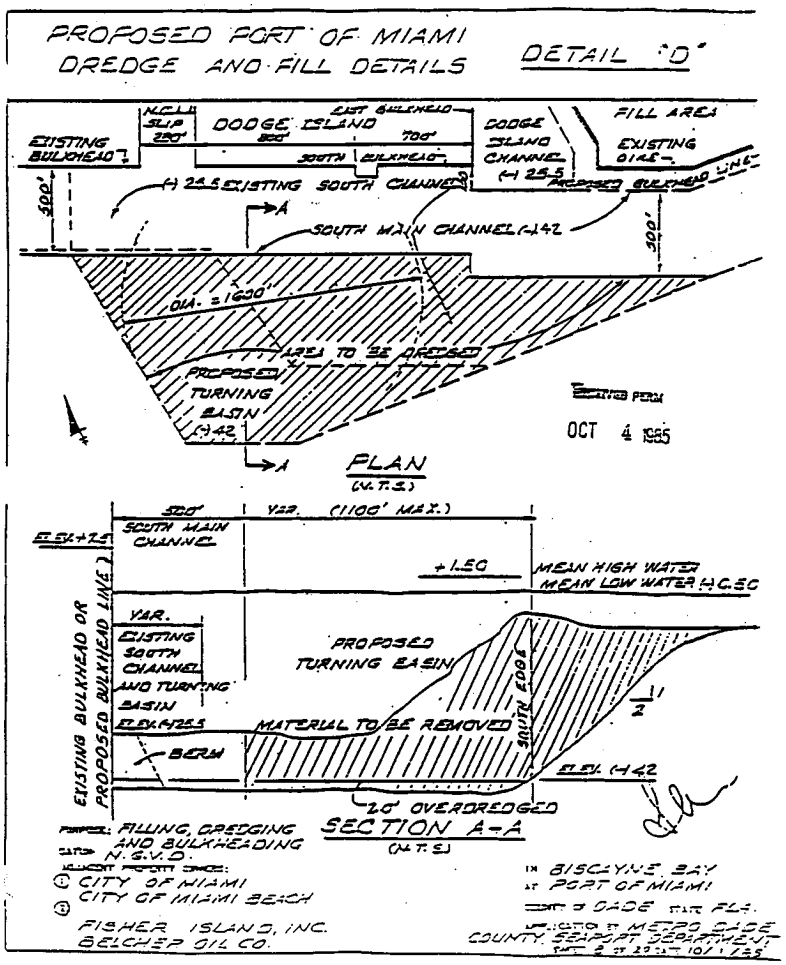
DATUM: N.G.V.D.

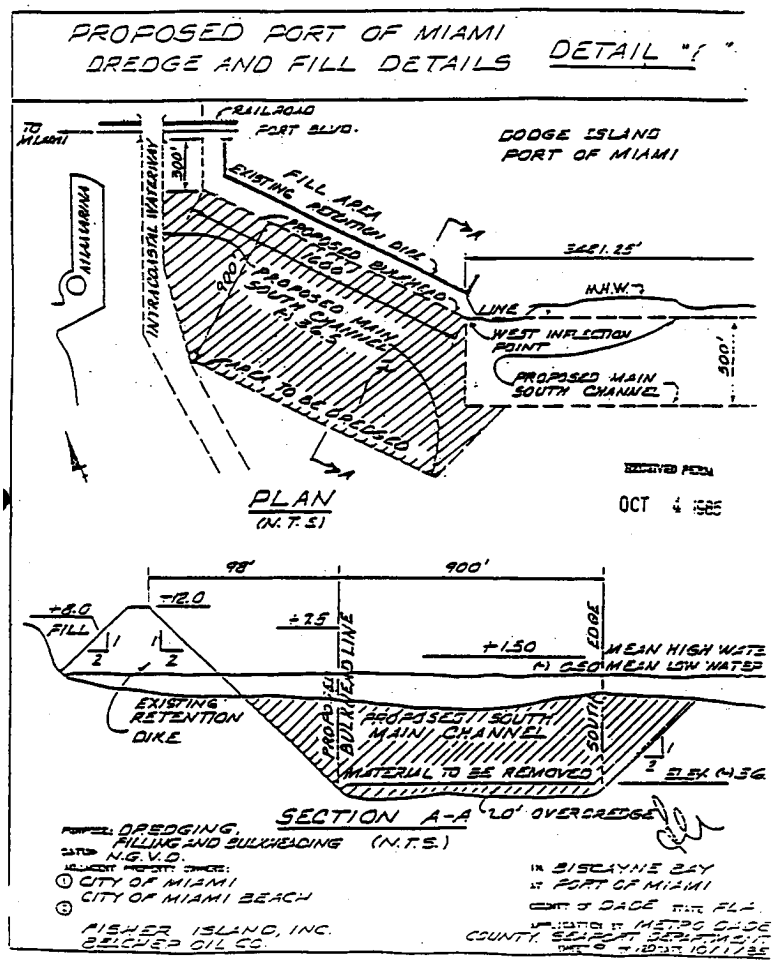
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.

IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.

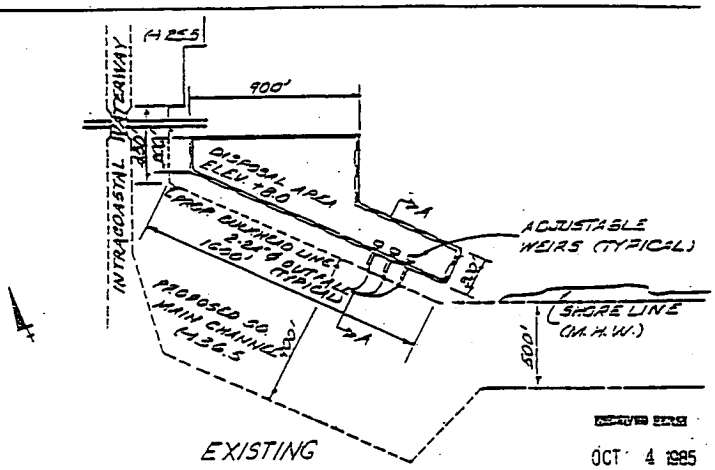
APPLICATION TO METRO DADE
COUNTY SEAPORT DEPARTMENT
DATE 9-30-85 FILE NO. 17355


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL
ELEV. +4.2
400'
VAR.
+ L50
MEAN HIGH WATER
MEAN LOW WATER (-) 0.5
PROPOSED BULKHEAD LINE
SOUTH EDGE PROPOSED TURNING BASIN
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
ELEV. (-) 42
SECTION C-C
(N. T. S.)
FOR LOCATION & NOTE SEE SHEET 5 OF 20
ELEV. +7.5
500'
VAR.
+ L50
MEAN HIGH WATER
MEAN LOW WATER (-) 0.5
TYP. ROD
900'
EXISTING BULKHEAD
EXISTING CHANNEL AND TURNING BASIN
25' BERM
SOUTH EDGE
PROPOSED TURNING BASIN
1/2
1/2
1
2
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
ELEV. (-) 42
10' OVER DREDGED
SECTION D-D
(N. T. S.)
FOR LOCATION & NOTE SEE SHEET 5 OF 20
DREDGING, FILLING AND BULKHEADING
N.G.V.D.
CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND INC.
BELCHER OIL CO.
OCT
IN BISCAYNE BAY
AT PORT OF MIAMI
DADE FLA
METRO DADE COUNTY SEAPORT DEPARTMENT


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "D"
EXISTING BULKHEAD
DODGE ISLAND
SOUTH BULKHEAD
DODGE ISLAND CHANNEL
FILL AREA
EXISTING
PROPOSED BULKHEAD LINE
(-) 25.5 EXISTING SOUTH CHANNEL
SOUTH MAIN CHANNEL (-)42
DIA. = 1600'
AREA TO BE DREDGED
PROPOSED TURNING BASIN (-)42
PLAN
(M.T.S.)
OCT 4 1995
SOUTH MAIN CHANNEL
+1.5'
MEAN HIGH WATER
MEAN LOW WATER +0.5'
EXISTING SOUTH CHANNEL AND TURNING BASIN
PROPOSED TURNING BASIN
MATERIAL TO BE REMOVED
BERM
EXISTING BULKHEAD OR PROPOSED BULKHEAD LINE
2' OVERDREDGED
SECTION A-A
(M.T.S.)
PURPOSE: FILLING, DREDGING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
DADE COUNTY, FLA.
MIAMI-DADE COUNTY SEAPORT DEPARTMENT


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "1"
TO MIAMI
RAILROAD
PORT BLVD.
300'
EXISTING FILL AREA
PROPOSED RETENTION DIKE
INTRACOASTAL WATERWAY
MIAMARINA
PROPOSED BULKHEAD LINE
PROPOSED SOUTH CHANNEL
AREA TO BE DREDGED
5481.25'
M.H.W. LINE
WEST INFLECTION POINT
PROPOSED MAIN SOUTH CHANNEL
400'
DODGE ISLAND
PORT OF MIAMI
PLAN
(N.T.S.)
RECEIVED FROM
OCT 4 1985
98'
900'
+8.0
FILL
+12.0
+2.5
+1.50
MEAN HIGH WATER
MEAN LOW WATER
EDGE
EXISTING RETENTION DIKE
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL
SOUTH
MATERIAL TO BE REMOVED
EL. -36
SECTION A-A
(N.T.S.)
10' OVERDREDGE
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
SUNCOR OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
DADE FLA.
COUNTY.

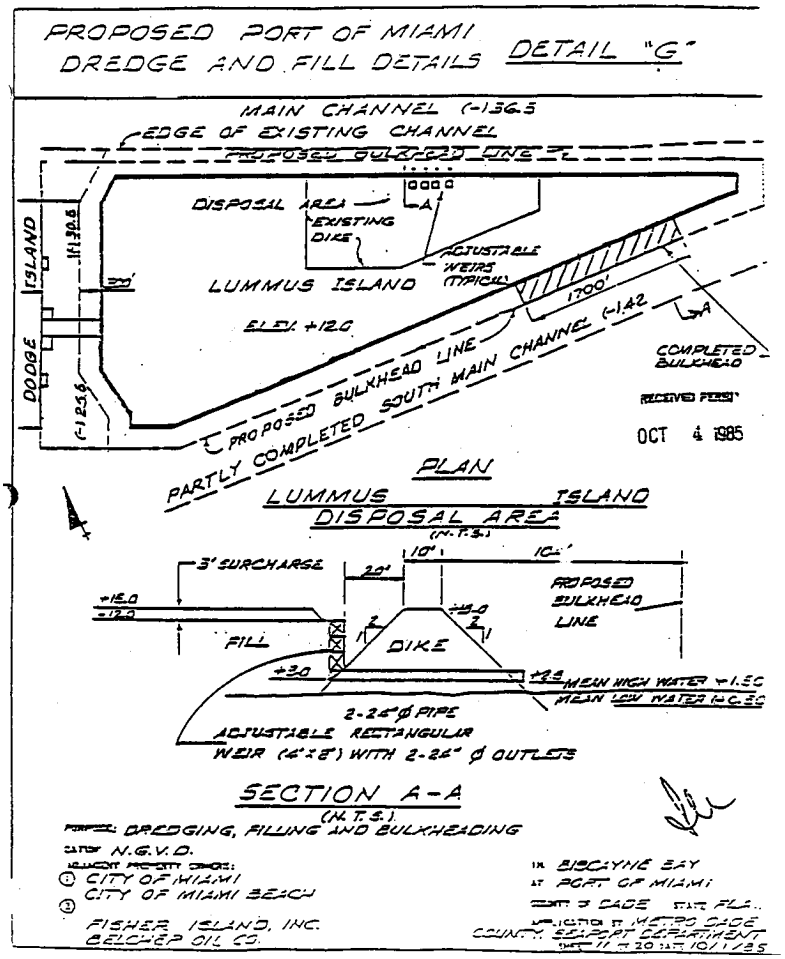
PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS DETAIL "F"

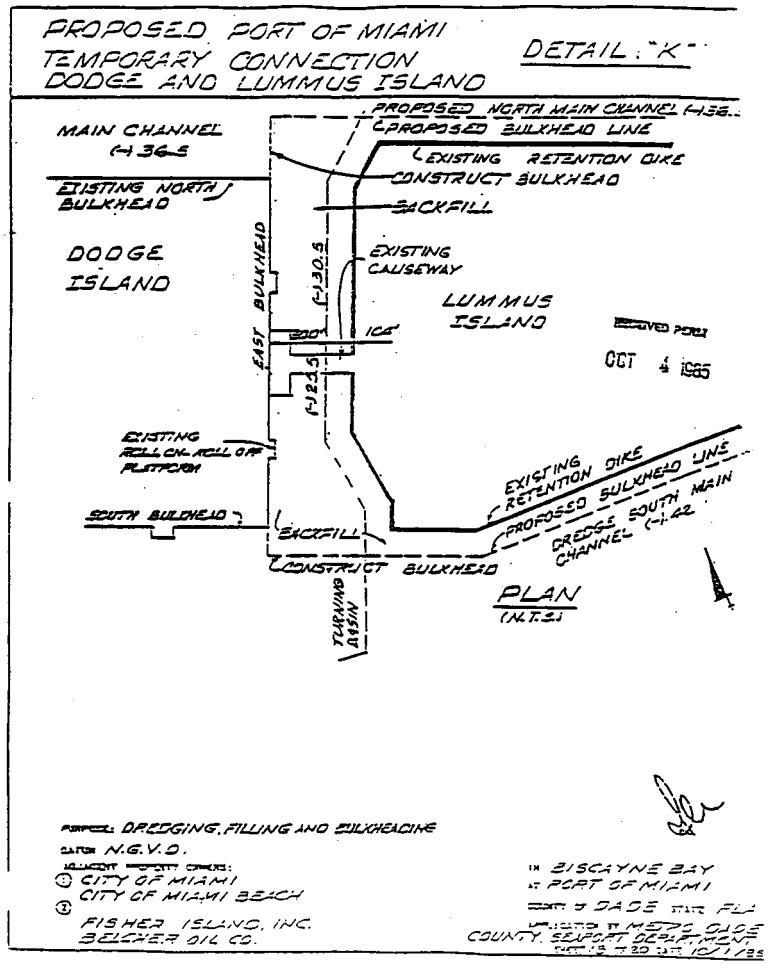


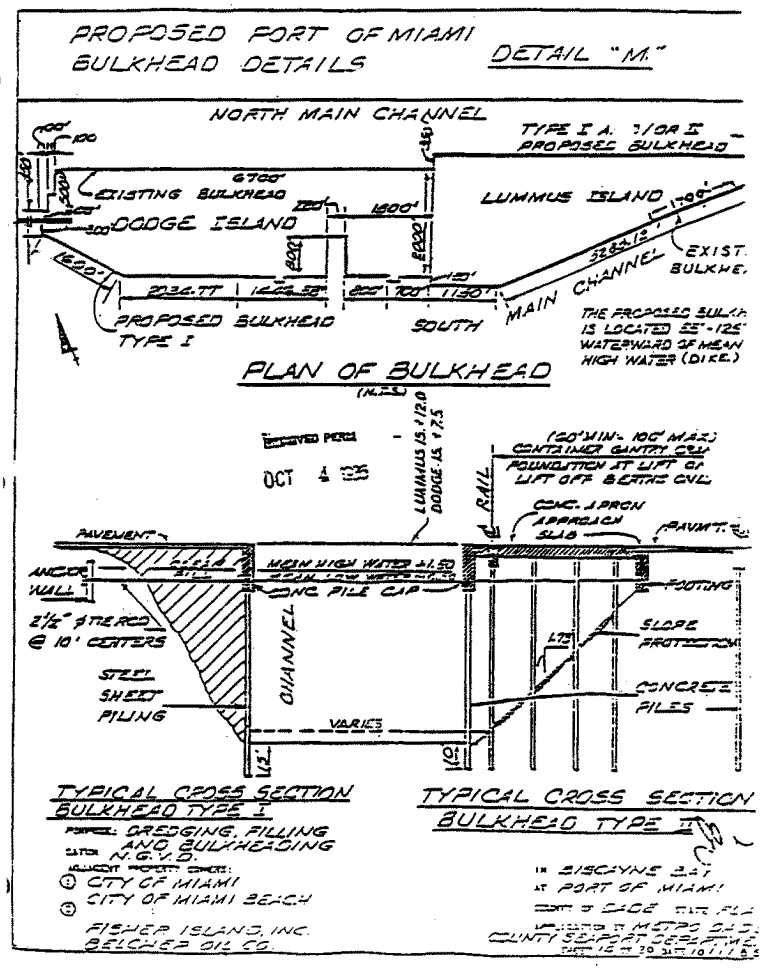
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.

IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION OF METRO DADE COUNTY SEAPORT DEPARTMENT
DATED 10-30-85 RCVD 10/1/85

OCT 4 1985


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "G"
MAIN CHANNEL (-)36.5
EDGE OF EXISTING CHANNEL
PROPOSED BULKHEAD LINE
DISPOSAL AREA
EXISTING DIKE
ADJUSTABLE WEIRS (TYPICAL)
LUMMUS ISLAND
ELEV. +12.0
1700'
DODGE ISLAND
(-)32.6
(-)25.6
PROPOSED BULKHEAD LINE
PARTLY COMPLETED SOUTH MAIN CHANNEL (-)42
COMPLETED BULKHEAD
RECEIVED FEB
OCT 4 1985
PLAN
LUMMUS ISLAND
DISPOSAL AREA
(N.T.S.)
3' SURCHARGE
20'
10'
10'
+15.0
+12.0
PROPOSED BULKHEAD LINE
FILL
DIKE
+5.0
+3.0
+1.5 MEAN HIGH WATER +1.5C
MEAN LOW WATER (+) C.3C
2-24" Ø PIPE
ADJUSTABLE RECTANGULAR
WEIR (4'x2') WITH 2-24" Ø OUTLETS
SECTION A-A
(N.T.S.)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
DADE STATE FLA.
VICINITY MAP
METRO DADE COUNTY SEAPORT DEPARTMENT
DATE 11-20-85 10/1/85

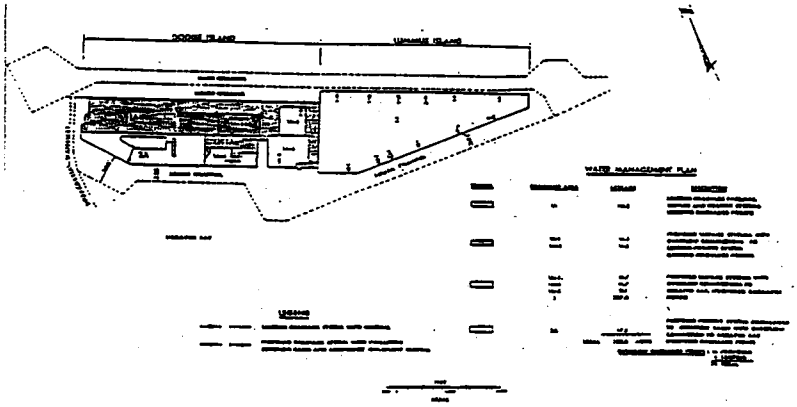

PROPOSED PORT OF MIAMI
TEMPORARY CONNECTION
DODGE AND LUMMUS ISLAND
DETAIL "K"
PROPOSED NORTH MAIN CHANNEL (-)36.
PROPOSED BULKHEAD LINE
EXISTING RETENTION DIKE
CONSTRUCT BULKHEAD
BACKFILL
MAIN CHANNEL (-)36.5
EXISTING NORTH BULKHEAD
DODGE ISLAND
EAST BULKHEAD
(-)30.5
EXISTING CAUSEWAY
LUMMUS ISLAND
200'
ICA'
(-)24.5
RECEIVED PORT
OCT 4 1985
EXISTING ROLL ON-ROLL OFF PLATFORM
SOUTH BULKHEAD
BACKFILL
EXISTING RETENTION DIKE
PROPOSED BULKHEAD LINE
DREDGE SOUTH MAIN CHANNEL (-)42
CONSTRUCT BULKHEAD
TURNING BASIN
PLAN
(N.T.S.)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
1. CITY OF MIAMI
2. CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
DADE COUNTY, FLA
SUBMITTED TO MIAMI-DADE COUNTY SEAPORT DEPARTMENT
OCT 3 7 30 AM OCT 1985


PROPOSED PORT OF MIAMI
BULKHEAD DETAILS
DETAIL "M"
NORTH MAIN CHANNEL
TYPE I A. I/OR II
PROPOSED BULKHEAD
EXISTING BULKHEAD
6700'
1600'
LUMMUS ISLAND
DODGE ISLAND
EXIST.
BULKHE.
MAIN CHANNEL
SOUTH
PROPOSED BULKHEAD
TYPE I
THE PROPOSED BULKH
IS LOCATED 55'-125'
WATERWARD OF MEAN
HIGH WATER (DIKE.)
PLAN OF BULKHEAD
LUMMUS IS. +12.0
DODGE IS. +7.5
RAIL
(20' MIN. 100' MAX.)
CONTAINER GANTRY CRA
FOUNDATION AT LIFT OF
LIFT OFF BERTHS ONLY
CONC. APRON
APPROACH
SLAB
PAVEMENT
MEAN HIGH WATER +1.50
CONC. PILE CAP
FOOTING
ANCHOR
WALL
2½" Ø STEEL ROD
@ 10' CENTERS
SLOPE
PROTECTION
CHANNEL
STEEL
SHEET
PILING
CONCRETE
PILES
VARIES
TYPICAL CROSS SECTION
BULKHEAD TYPE I
PURPOSE: DREDGING, FILLING
AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNER:
CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
TYPICAL CROSS SECTION
BULKHEAD TYPE II
IN BISCAYNE BAY
AT PORT OF MIAMI

PORT OF MIAMI
DRAINAGE DETAILS

COE # 79-0623
DER #

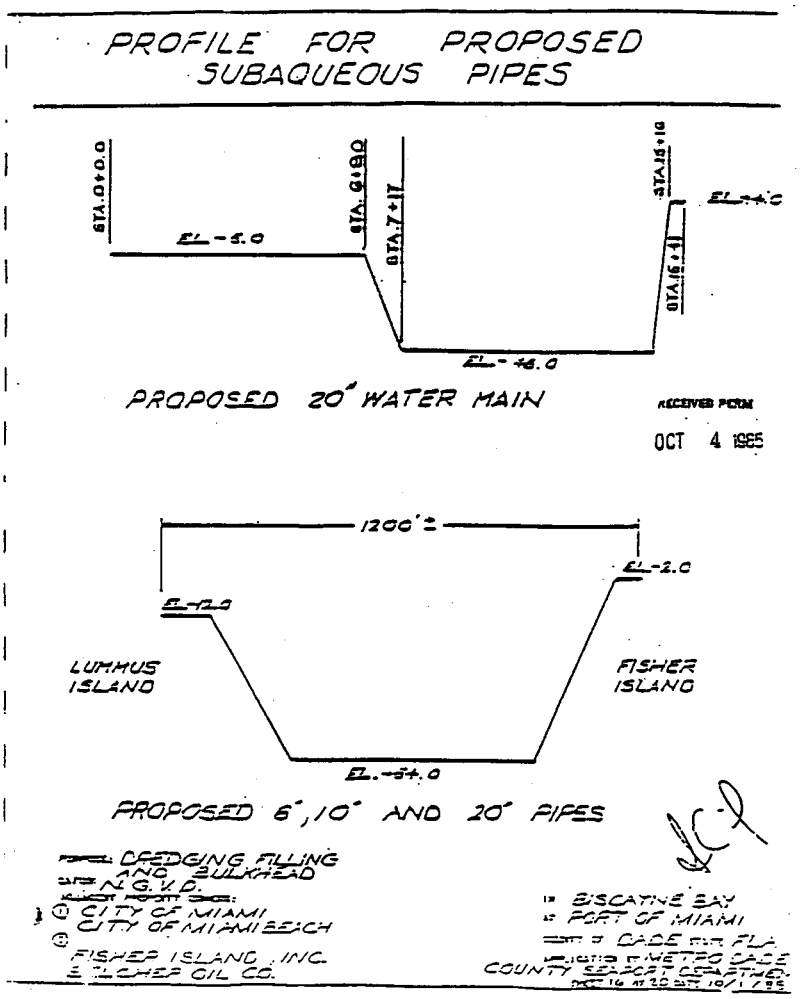
RECEIVED [illegible]
OCT 4 1985

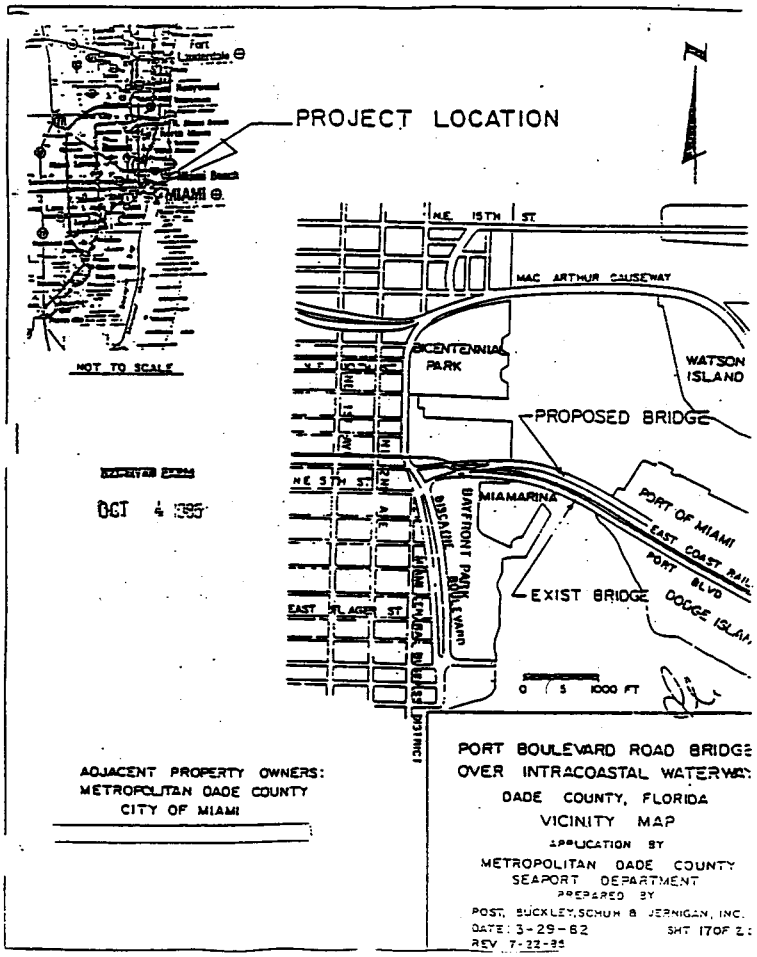


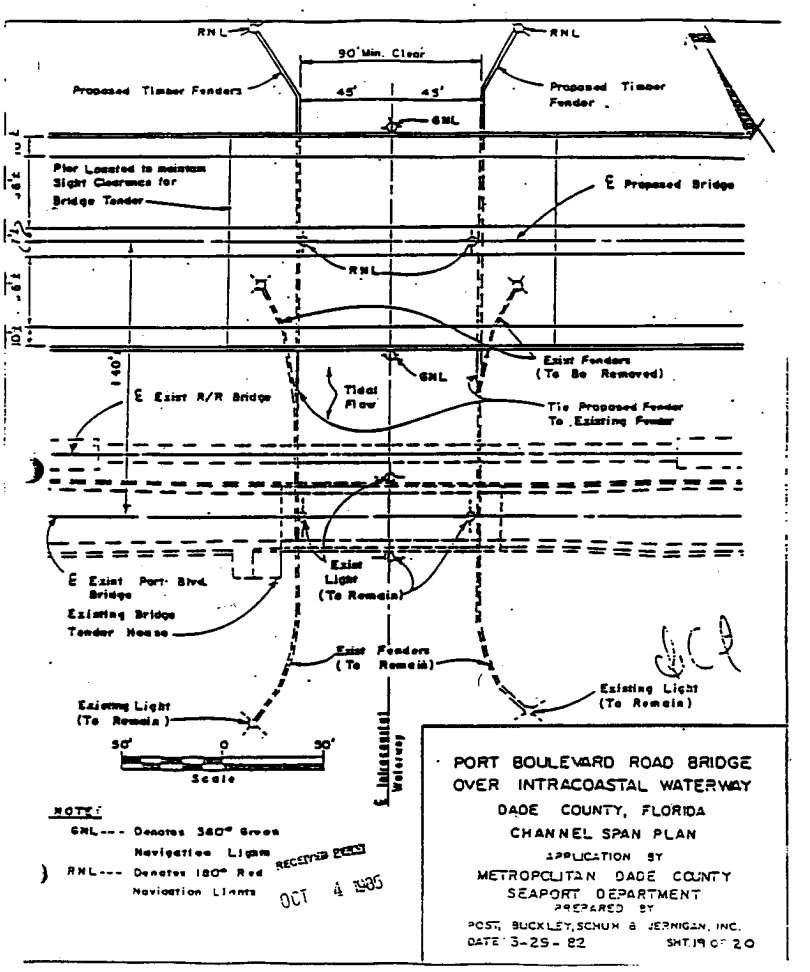
MASTER DRAINAGE PLAN

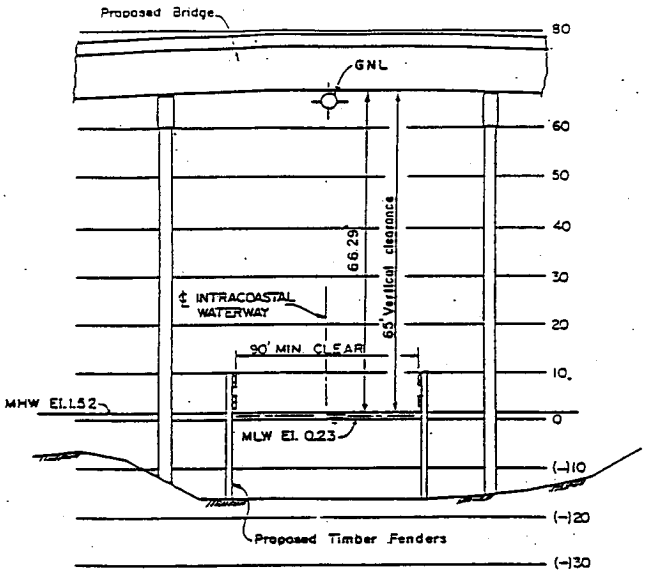
PURPOSE: DREDGING, FILLING AND BULKHEADING, AND DRAINAGE
USE: N.G.V.D.
APPLICANT: CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.

IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
LOCATION BY METRO DADE COUNTY SEAPORT DEPARTMENT


PROFILE FOR PROPOSED SUBAQUEOUS PIPES
STA. 0+0.0
EL. -5.0
STA. 6+90
STA. 7+17
STA. 15+16
EL. -46.0
PROPOSED 20" WATER MAIN
RECEIVED FROM
OCT 4 1965
1200'±
EL. -2.0
EL. -12.0
LUMMUS ISLAND
FISHER ISLAND
EL. -54.0
PROPOSED 6", 10" AND 20" PIPES
DREDGING FILLING AND BULKHEAD
N.G.V.D.
CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND, INC.
FISHER OIL CO.
BISCAYNE BAY
PORT OF MIAMI
DADE CO. FLA.
COUNTY SEAPORT DEPARTMENT


PROJECT LOCATION
N
NOT TO SCALE
NE 15TH ST
MAC ARTHUR CAUSEWAY
BICENTENNIAL PARK
WATSON ISLAND
PROPOSED BRIDGE
NE 5TH ST
MIAMARINA
BISCAYNE BAYFRONT PARK BOULEVARD
PORT OF MIAMI
EAST COAST RAIL
PORT BLVD
EXIST BRIDGE
DODGE ISLAND
EAST FLAGLER ST
0 5 1000 FT
OCT 4 1995
ADJACENT PROPERTY OWNERS:
METROPOLITAN DADE COUNTY
CITY OF MIAMI
PORT BOULEVARD ROAD BRIDGE
OVER INTRACOASTAL WATERWAY
DADE COUNTY, FLORIDA
VICINITY MAP
APPLICATION BY
METROPOLITAN DADE COUNTY
SEAPORT DEPARTMENT
PREPARED BY
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
DATE: 3-29-82
REV 7-22-85
SHT 17OF 2


RNL
90' Min. Clear
RNL
Proposed Timber Fenders
45'
45'
Proposed Timber Fender
GNL
Pier Located to maintain Sight Clearance for Bridge Tender
℄ Proposed Bridge
RNL
Exist Fenders (To Be Removed)
GNL
℄ Exist R/R Bridge
Tidal Flow
Tie Proposed Fender To Existing Fender
℄ Exist Port Blvd. Bridge
Existing Bridge Tender House
Exist Light (To Remain)
Exist Fenders (To Remain)
Existing Light (To Remain)
Existing Light (To Remain)
50'
0
50'
Scale
℄ Intracoastal Waterway
NOTE:
GNL--- Denotes 360° Green Navigation Lights
RNL--- Denotes 180° Red Navigation Lights
RECEIVED
OCT 4 1982
PORT BOULEVARD ROAD BRIDGE
OVER INTRACOASTAL WATERWAY
DADE COUNTY, FLORIDA
CHANNEL SPAN PLAN
APPLICATION BY
METROPOLITAN DADE COUNTY
SEAPORT DEPARTMENT
PREPARED BY
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
DATE 3-29-82
SHT. 19 OF 20



RECEIVED FORM
OCT 4 1985

NOTE:

GNL -- DENOTES 360° GREEN NAVIGATION LIGHTS.

PORT BOULEVARD ROAD BRIDGE
OVER INTRACOASTAL WATERWAY
DADE COUNTY, FLORIDA
CHANNEL SPAN ELEVATION
APPLICATION BY
METROPOLITAN DADE COUNTY
SEAPORT DEPARTMENT
PREPARED BY
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
DATE 3-29-82 SHT. 20 OF 20

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

May 22, 1986

Metro-Dade Seaport Department
c/o Luis Ajamil
Post, Buckley, Schuh and Jernigan, Inc.
6850 S. W. 40th Street
Miami, Florida 33155

Dear Mr. Ajamil:

Permit No. 131106409, Dade County
Port of Miami Expansion

Your request to modify this permit has been received and reviewed by Department staff. The modification is for changing the expiration date on the permit from March 7, 1991 to March 7, 2001. The applicant applied for a 15-year permit and the date on the original permit was incorrect.

Six new drawings were submitted which show minor revisions in construction details from the original permit drawings. These new signed and sealed copies were not available at the time the permit was issued. These revisions include:

1. A widener in the south channel south of Dodge Island, encompassing Little Island;

2. Creation of a -6 ft. slip in the south channel at Lummus Island for the pilot boat; and,

3. Installation of dolphin piles adjacent to Miamarina.

Sheet 2A of 20 shows those maintenance areas which still need to be dredged.

Since the proposed modifications are not expected to result in any adverse environmental impact or water quality degradation, the permit is hereby modified as requested. By copy of this letter and the attached drawings, we are notifying all necessary parties of the modifications.

This letter of approval does not alter the Specific or General Conditions, or monitoring requirements of the permit. This letter and accompanying drawings must be attached to the original permit.

This letter constitutes final agency action unless a person substantially affected by this action requests an administrative hearing pursuant to Section 120.57, Florida Statutes. The petition must be filed within fourteen (14) days from receipt of this letter. The petition must comply with the requirements of Florida Administrative Code Rule 28-5.201 and be filed pursuant to Rule 17-103.155(1) in the Office of General Counsel of the Department of Environmental Regulation at 2600 Blair Stone Road, Tallahassee, Florida 32301-8241. Petitions which are not filed in accordance with the above provisions will not be accepted by the Department. If a formal proceeding pursuant to Section 120.57(1) is requested, at such formal hearing all parties shall have an opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination of witnesses and submit rebuttal evidence, to submit proposed findings of facts and orders, to file exceptions to any order or hearing officer's recommended order, and to be represented by counsel. If an informal proceeding is requested, the agency will, in accordance with its rules of procedure, give affected persons or parties or their counsel an opportunity, at a convenient time and place, to present to the agency or hearing officer written or oral evidence in opposition to the agency's action or refusal to act, or a written statement challenging the grounds upon which the agency has chosen to justify its action or inaction, pursuant to Section 120.57(2), Florida Statutes. The hearing process is designed to formulate agency action. Accordingly, the Department's final action as a result of a hearing may be different from the position taken by it in this stage. Therefore, any person who may wish to contest the Department's ultimate permitting decision must petition for hearing within the fourteen day period described above. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request a hearing under Section 120.57, Florida Statutes.

Sincerely,

Randall L. Armstrong, Chief
Bureau of Permitting

RA/KLB/jy

Enclosure

cc: DER, Southeast District
DNR, Marine Patrol
Florida Game and Fresh Water Fish Commission
U. S. Army Corps of Engineers, Jacksonville
Charles Horne, DNR, State Lands

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISION DETERMINING SUBSTANTIAL INTERESTS

PART II
FORMAL PROCEEDINGS

28-5.201 Initiation of Formal Proceedings

(1) Initiation of formal proceedings shall be made by petition to the agency responsible for rendering final agency action. The term petition as used herein includes any application or other document which expresses a request for formal proceedings. Each petition should be printed, typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners, and an explanation of how his/her substantial interests will be affected by agency determination;

(c) A statement of when and how petitioner received notice of the agency decision or intent to render a decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

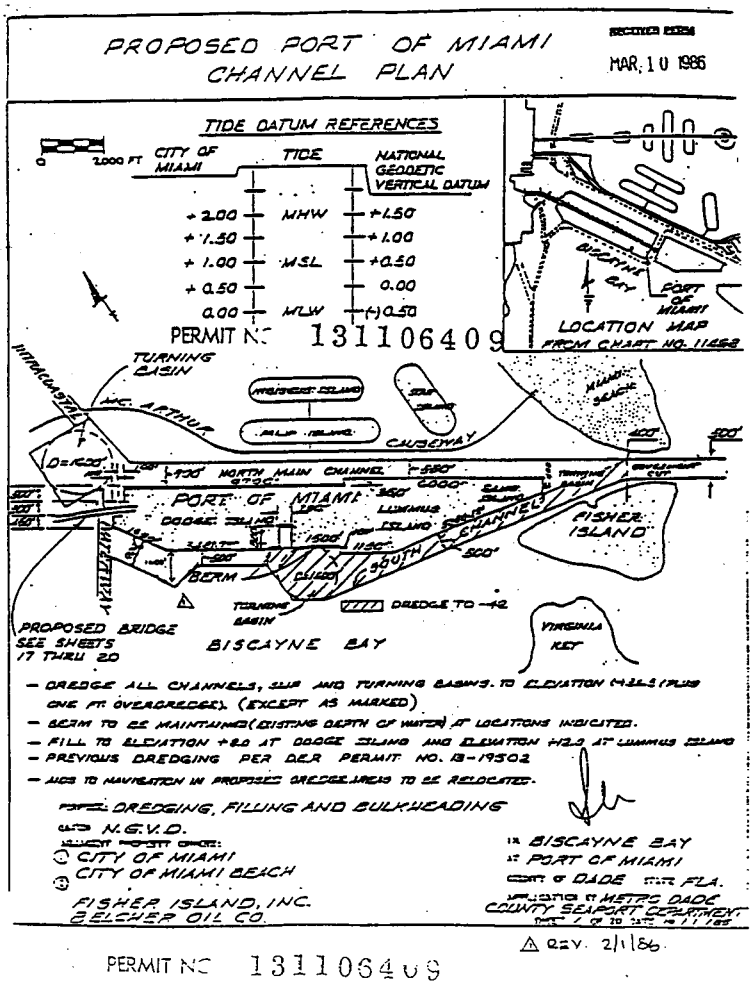
(e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief;

(f) A demand for relief to which the petitioner deems himself entitled; and

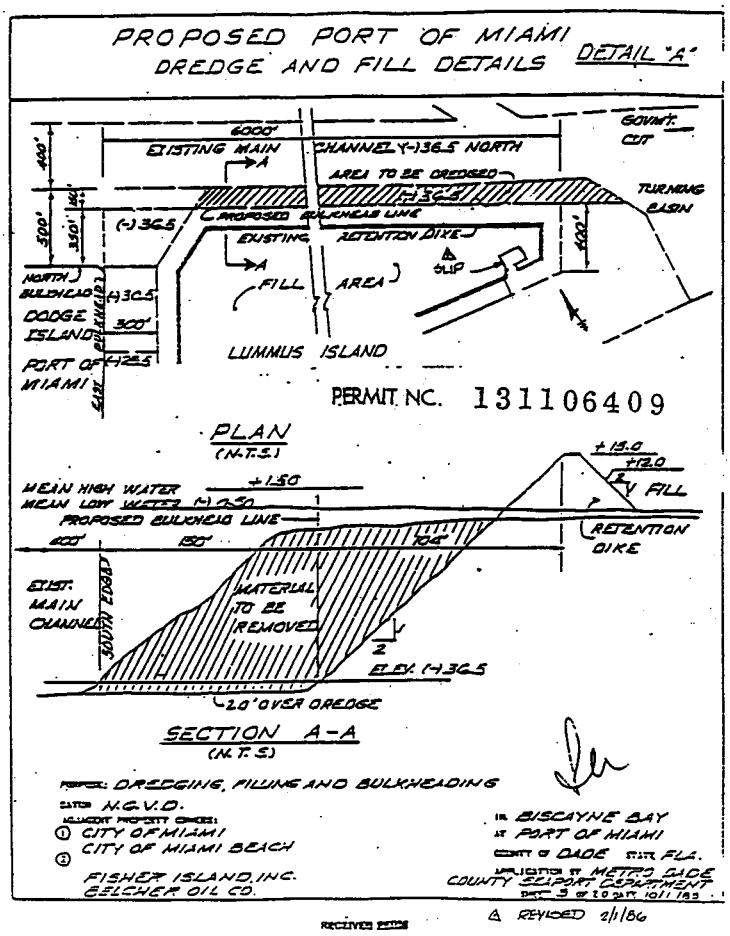
(g) Other information which the petitioner contends is material.

****

A petition may be denied if the petitioner does not state adequately a material factual allegation, such as a substantial interest in the agency determination, or if the petition is untimely. (Section 28-5.201(3)(a), F.A.C.)



PERMIT NO 13110640 9



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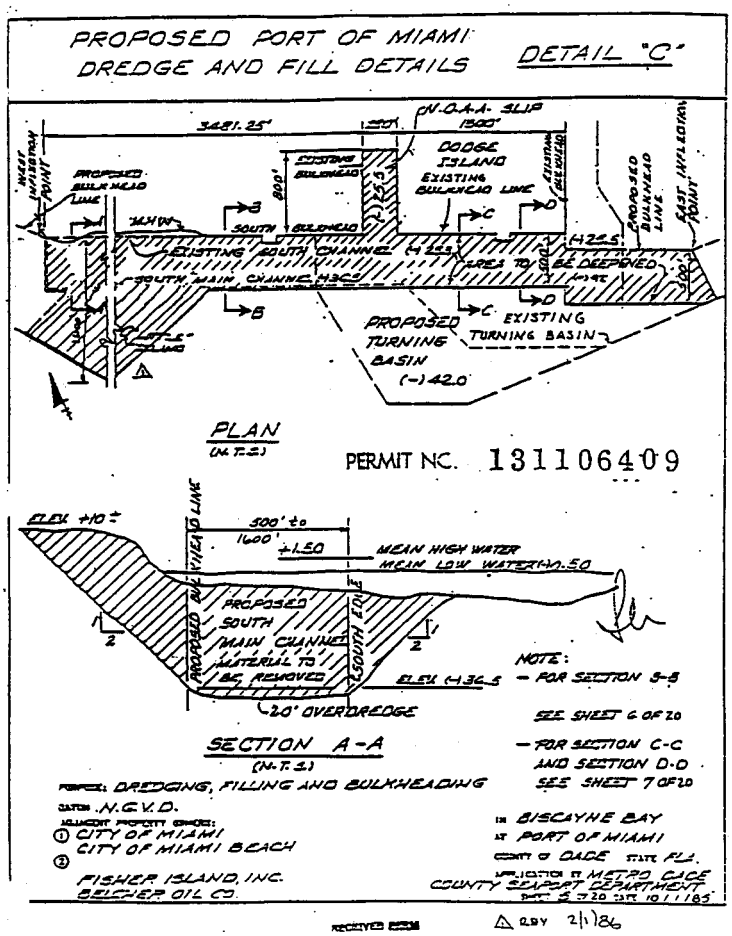
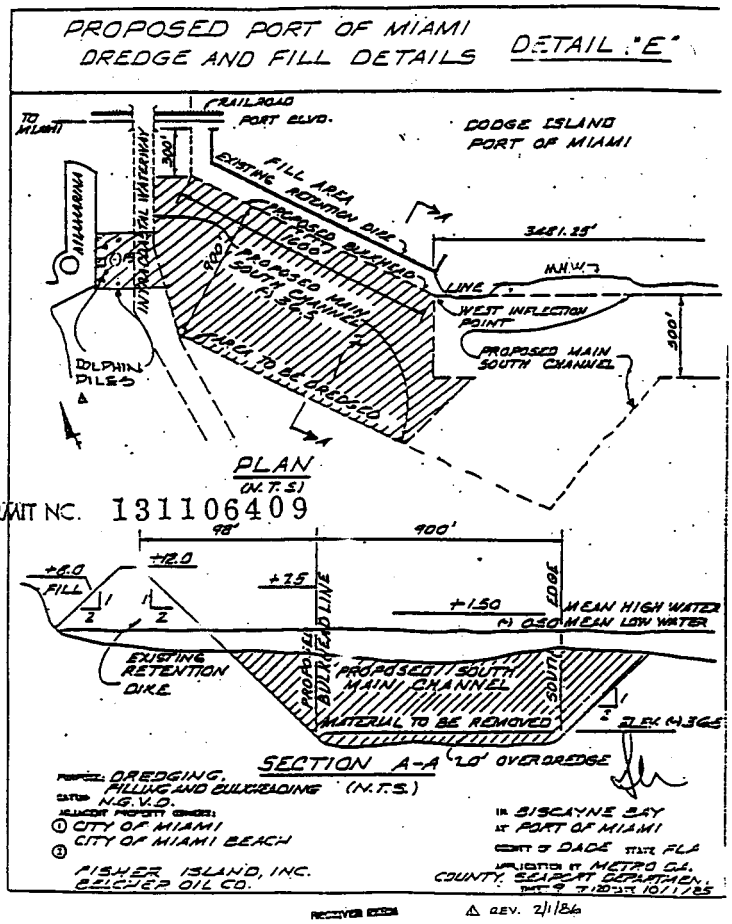
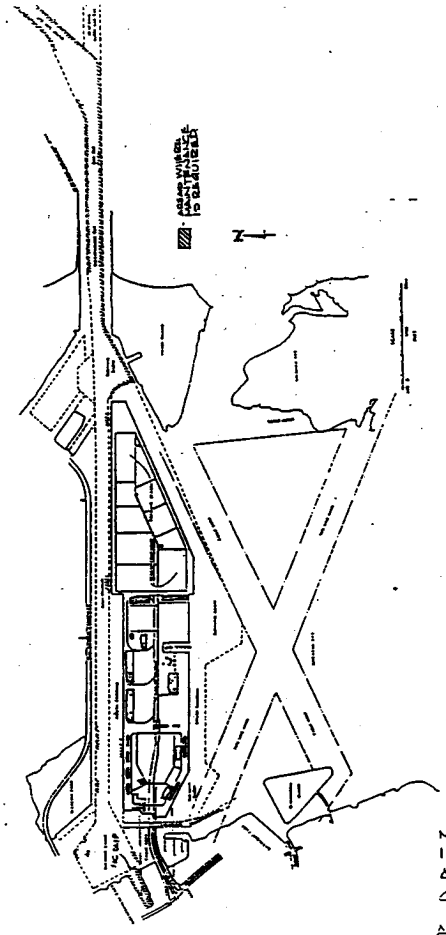
MAR 10 1966


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "C"
N.O.A.A. SLIP
1500'
3481.25'
DODGE ISLAND
EXISTING BULKHEAD LINE
PROPOSED BULKHEAD LINE
EAST INFLECTION POINT
WEST INFLECTION POINT
PROPOSED BULKHEAD LINE
EXISTING BULKHEAD
800'
MLW
SOUTH BULKHEAD
EXISTING SOUTH CHANNEL
AREA TO BE DEEPENED
SOUTH MAIN CHANNEL
PROPOSED TURNING BASIN
(-)42.0
EXISTING TURNING BASIN
PLAN
(N.T.S.)
PERMIT NO. 131106409
ELEV +10 ±
300' ±o
1600'
+1.50
MEAN HIGH WATER
MEAN LOW WATER +0.50
PROPOSED BULKHEAD LINE
SOUTH LINE
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
ELEV (-)36.5
20' OVERDREDGE
SECTION A-A
(N.T.S.)
NOTE:
- FOR SECTION B-B
SEE SHEET 6 OF 20
- FOR SECTION C-C AND SECTION D-D
SEE SHEET 7 OF 20
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
CITY OF MIAMI BEACH
②
FISHER ISLAND, INC.
BEICHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION OF METRO DADE COUNTY SEAPORT DEPARTMENT
SHEET 5 OF 20 DATE 10/1/85
△ REV 2/1/86
RECEIVED
MAR 10 1986


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "E"
TO MIAMI
RAILROAD
PORT BLVD.
DODGE ISLAND
PORT OF MIAMI
300'
EXISTING RETENTION DIKE
FILL AREA
PROPOSED BULKHEAD
INTRACOASTAL WATERWAY
PROPOSED MAIN SOUTH CHANNEL
MATERIAL TO BE DREDGED
DOLPHIN PILES
3481.25'
MHWL
LINE
WEST INFLECTION POINT
PROPOSED MAIN SOUTH CHANNEL
300'
PLAN
(N.T.S.)
PERMIT NO. 131106409
98'
400'
+12.0
+6.0
FILL
+7.5
+1.50
EDGE
MEAN HIGH WATER
-0.50 MEAN LOW WATER
EXISTING RETENTION DIKE
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL
MATERIAL TO BE REMOVED
SOUTH
-21 EX. (-)36.5
SECTION A-A
'D' OVERDREDGE
PURPOSE: DREDGING, FILLING AND BULKHEADING (N.T.S.)
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA
APPLICATION BY METRO CO.
COUNTY SEAPORT DEPARTMEN...
DATE OF APPLICATION 10/1/85
RECEIVED DADE
MAY 10 1986
△ REV. 2/1/86



APR 29 1986

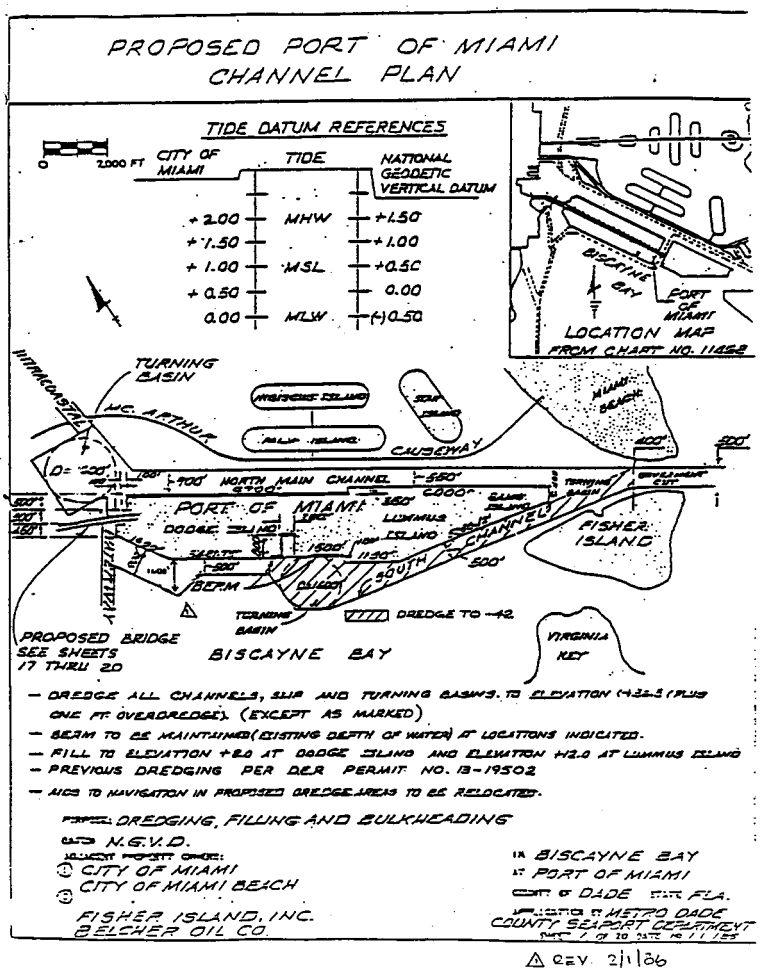
4/25/86

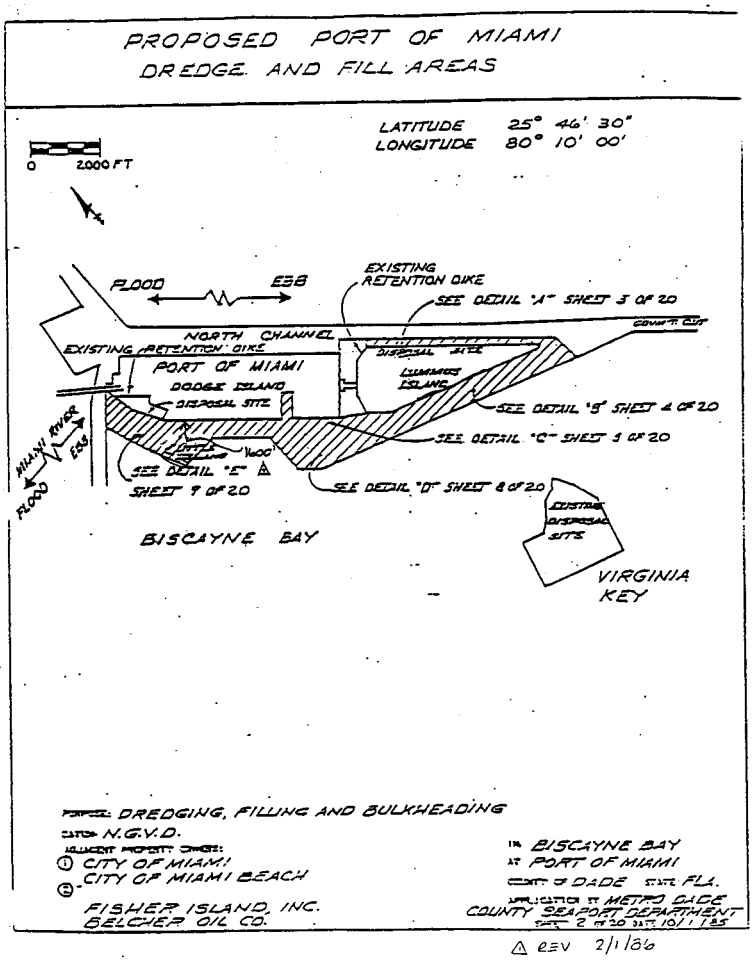
MAINTANCE AREAS
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE, FL

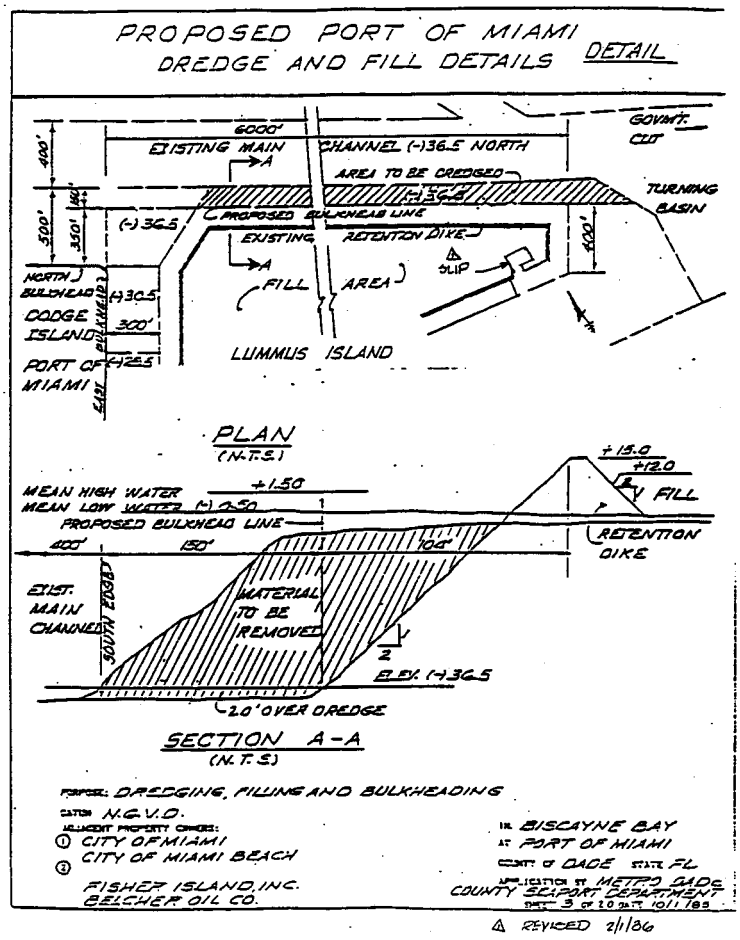
APPLICATION BY:
METRO-DADE SEAPORT
DEPARTMENT

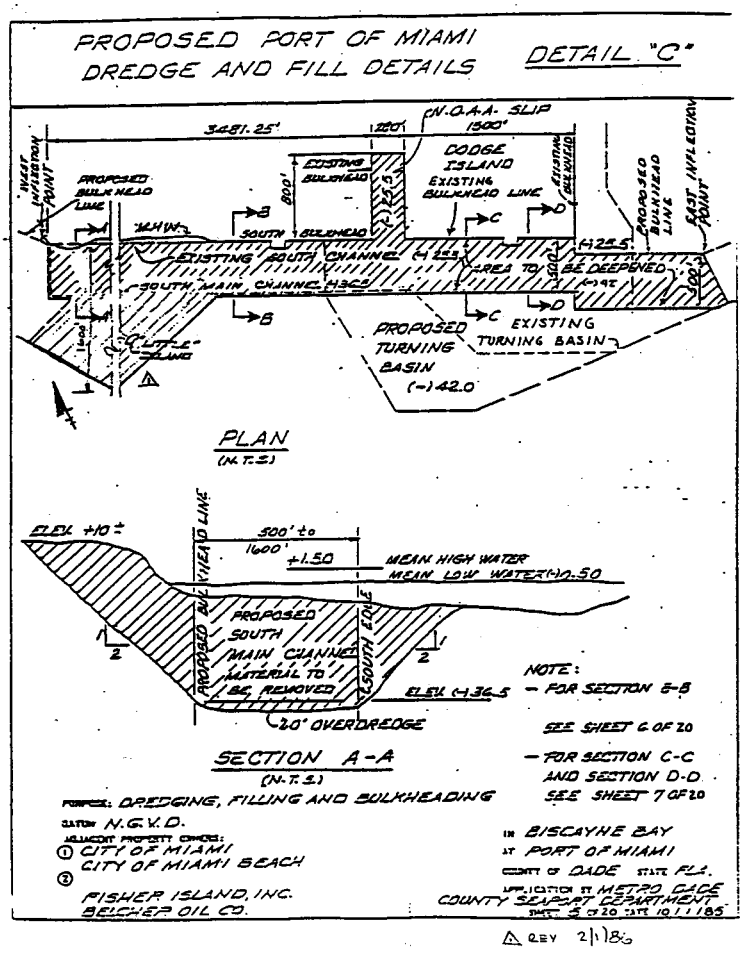
Sec 24 ; 20 4/25/86

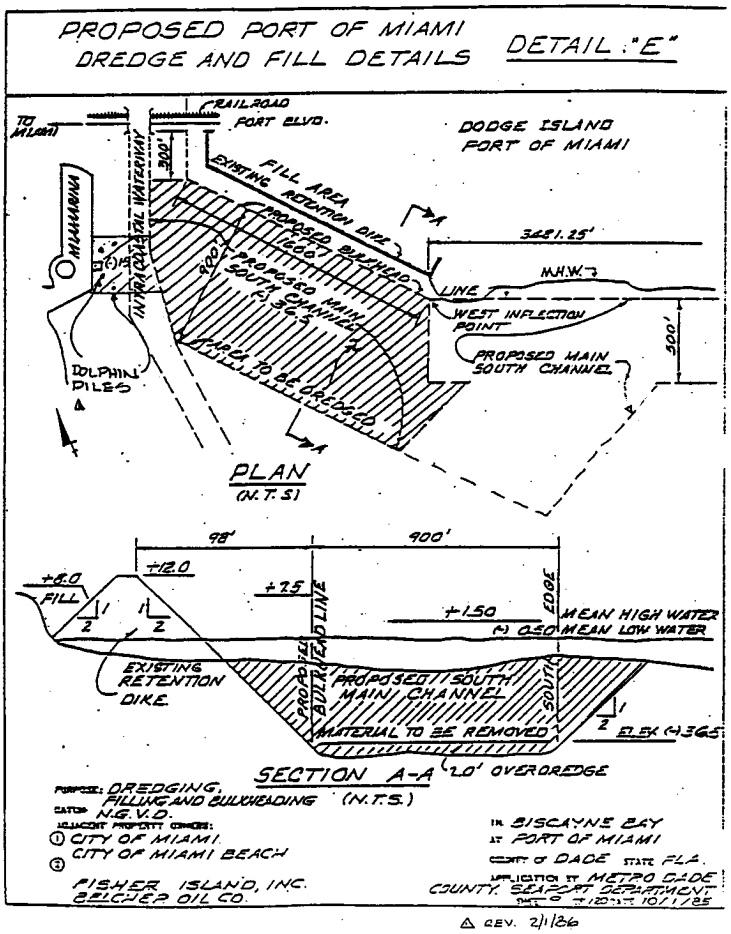
PERMIT NO. 131106409

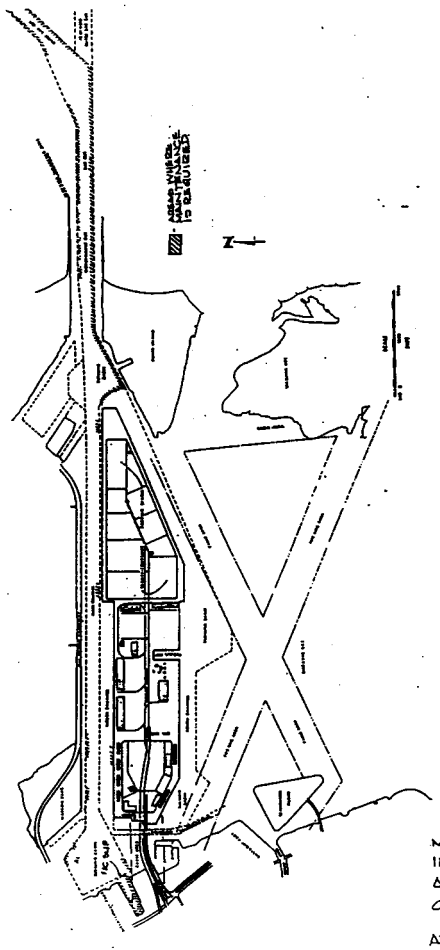

PROPOSED PORT OF MIAMI
CHANNEL PLAN
TIDE DATUM REFERENCES
CITY OF MIAMI
TIDE
NATIONAL GEODETIC VERTICAL DATUM
+2.00 MHW +1.50
+1.50 +1.00
+1.00 MSL +0.50
+0.50 0.00
0.00 MLW (-)0.50
LOCATION MAP
FROM CHART NO. 11468
BISCAYNE BAY
PORT OF MIAMI
TURNING BASIN
MACARTHUR CAUSEWAY
NORTH MAIN CHANNEL
PORT OF MIAMI
DODGE ISLAND
LUMMUS ISLAND
CHANNEL
FISHER ISLAND
SOUTH CHANNEL
BERM
TURNING BASIN
DREDGE TO -42
PROPOSED BRIDGE
SEE SHEETS
17 THRU 20
BISCAYNE BAY
VIRGINIA KEY
- DREDGE ALL CHANNELS, SLIP AND TURNING BASINS TO ELEVATION (-)42.5 (PLUS ONE FT. OVERDREDGE). (EXCEPT AS MARKED)
- BERM TO BE MAINTAINED (EXISTING DEPTH OF WATER) AT LOCATIONS INDICATED.
- FILL TO ELEVATION +8.0 AT DODGE ISLAND AND ELEVATION +12.0 AT LUMMUS ISLAND
- PREVIOUS DREDGING PER DER PERMIT NO. 13-19502
- AIDS TO NAVIGATION IN PROPOSED DREDGE AREAS TO BE RELOCATED.
DREDGING, FILLING AND BULKHEADING
N.G.V.D.
ADJACENT PROPERTY OWNER:
1 CITY OF MIAMI
2 CITY OF MIAMI BEACH
3
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
CO. OF DADE STATE FLA.
METRO DADE COUNTY SEAPORT DEPARTMENT
REV. 2/1/86


PROPOSED PORT OF MIAMI
DREDGE AND FILL AREAS
LATITUDE 25° 46' 30"
LONGITUDE 80° 10' 00"
0 2000 FT
FLOOD
EBB
EXISTING RETENTION DIKE
SEE DETAIL "A" SHEET 3 OF 20
NORTH CHANNEL
EXISTING RETENTION DIKE
PORT OF MIAMI
DODGE ISLAND
DISPOSAL SITE
LUMMUS ISLAND
SEE DETAIL "B" SHEET 4 OF 20
SEE DETAIL "C" SHEET 5 OF 20
SEE DETAIL "E" SHEET 9 OF 20
SEE DETAIL "D" SHEET 8 OF 20
MIAMI RIVER
EBB
FLOOD
BISCAYNE BAY
EXISTING DISPOSAL SITE
VIRGINIA KEY
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
1 CITY OF MIAMI
2 CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
SHEET 2 OF 20 DATE 10/1/85
△ EEV 2/1/86


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL
6000'
EXISTING MAIN CHANNEL (-)36.5 NORTH
AREA TO BE DREDGED
GOVMT. CUT
TURNING BASIN
PROPOSED BULKHEAD LINE
EXISTING RETENTION DIKE
SLIP
FILL AREA
NORTH BULKHEAD
CODGE ISLAND
PORT OF MIAMI
LUMMUS ISLAND
PLAN
(N.T.S.)
MEAN HIGH WATER +1.50
MEAN LOW WATER (-)0.50
PROPOSED BULKHEAD LINE
+15.0
+12.0
FILL
RETENTION DIKE
400'
150'
100'
EXIST. MAIN CHANNEL
SOUTH EDGE
MATERIAL TO BE REMOVED
ELEV. (-)36.5
2.0' OVER DREDGE
SECTION A-A
(N.T.S.)
PROPOSAL: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FL
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
SHEET 3 OF 20 SHTS. 10/1.185
REVISED 2/1/86


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "C"
(N.O.A.A. SLIP
1500'
3481.25'
200'
DODGE ISLAND
EXISTING BULKHEAD LINE
EXISTING BULKHEAD
PROPOSED BULKHEAD LINE
EAST INFLECTION POINT
WEST INFLECTION POINT
PROPOSED BULK HEAD LINE
800'
225'
MLHW
SOUTH BULKHEAD
EXISTING SOUTH CHANNEL
SOUTH MAIN CHANNEL
AREA TO BE DEEPENED
PROPOSED TURNING BASIN
EXISTING TURNING BASIN
(-)42.0
"LITTLE" SLIP
PLAN
(N.T.S.)
ELEV. +10 ±
500' to 1600'
+1.50
MEAN HIGH WATER
MEAN LOW WATER (-)0.50
PROPOSED BULKHEAD LINE
SOUTH LINE
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
ELEV (-)36.5
20' OVERDREDGE
SECTION A-A
(N.T.S.)
NOTE:
- FOR SECTION B-B SEE SHEET 6 OF 20
- FOR SECTION C-C AND SECTION D-D SEE SHEET 7 OF 20
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
CITY OF MIAMI BEACH
②
FISHER ISLAND, INC.
BEICHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
SURVEYED BY METRO DADE COUNTY SURVEY DEPARTMENT
SHEET 5 OF 20 DATE 10.1.185
REV 2/1/86


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "E"
RAILROAD
PORT BLVD.
DODGE ISLAND
PORT OF MIAMI
FILL AREA
EXISTING RETENTION DIKE
PROPOSED BULKHEAD LINE
3481.25'
M.H.W. LINE
WEST INFLECTION POINT
PROPOSED MAIN SOUTH CHANNEL
500'
1600'
900'
PROPOSED MAIN SOUTH CHANNEL
AREAS TO BE DREDGED
DOLPHIN PILES
INTRACOASTAL WATERWAY
300'
PLAN
(N.T.S.)
98'
900'
+12.0
+8.0
FILL
+7.5
+1.50
MEAN HIGH WATER
(-) 0.50 MEAN LOW WATER
EDGE
EXISTING RETENTION DIKE
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL
SOUTH
MATERIAL TO BE REMOVED
EL. EX (-)36.5
2.0' OVERDREDGE
SECTION A-A (N.T.S.)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
③ FISHER ISLAND, INC.
④ SUPERIOR OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
DATE OF PREPARATION 10/1/85
△ REV. 2/1/86



MAINTANCE AREAS
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE, FL

APPLICATION BY:
METRO-DADE SEAPORT
DEPARTMENT

USACE Permit Number 79B-0623

[illegible] 108-006.00

DEPARTMENT OF THE ARMY

CORPS OF ENGINEERS

NOTICE OF AUTHORIZATION

6 OCT 1

A PERMIT TO DREDGE 11,400,000 CU YDS, FILL WITH 5,020,000 CU YDS, CONST STEEL SHEET PILING BULKHEADS, AND INSTALL CONCRETE SHORELINE WHARVES WI PILINGS, ALSO INSTALL SUBAQUEOUS PIPES

AT DODGE, LUMMUS, SAM'S AND FISHER ISLANDS IN MIAMI, DADE COUNTY, FLA

HAS BEEN ISSUED TO METROPOLITAN DADE COUNTY SEAPORTON 6 OCT 19

ADDRESS OF PERMITTEE 1015 NORTH AMERICAN WAY, RM 210
MIAMI, FL 33132

PERMIT NUMBER 79B-0623

JAMES W. R. ADAMS, COL C
District Engineer

ENG Form 4336
Jul 70

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE SITE OF W

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT. CORPS OF ENGINEERS
P. O. BOX. 4970
JACKSONVILLE. FLORIDA 32201

SAJOD-RR
798-0623

6 October 1980

Metropolitan Dade County Seaport
1015 North American Way, Rm 210
Miami, FL 33132

Gentlemen:

We are pleased to inclose your Department of the Army Permit and a Notice of Authorization which should be displayed at the construction site. Work may begin as soon as State and other required authorizations have been obtained. We have no evidence that a State Permit has been issued for the work and

NO WORK MAY BE ACCOMPLISHED UNTIL
STATE PERMIT REQUIREMENTS ARE MET.

You must notify the appropriate Area Engineer as representative of the District Engineer, of:

(1) The date of commencement of the work (mail attached card),
(2) The dates of work suspensions and resumptions if work is suspended over a week, and,
(3) The date of final completion.

Area Engineer addresses and telephone numbers are shown on the attached map. The Area Engineer is responsible for inspections to determine that permit conditions are strictly adhered to.

IT IS NOT LAWFUL TO DEVIATE FROM
THE APPROVED PLANS ATTACHED.

Sincerely,

GIRLAMO DICHIARA
Chief, Operations Division

4 Incl
1. Permit w/plans
2. Notice of Authorization
3. Commencement Card
4. Area Office Map

SAJ FL 25A
29 May 80

Application No. 79B-0023

Name of Applicant METROPOLITAN DADE COUNTY SEAPORT DEPARTMENT

Effective Date 6 October 1980

Expiration Date (If applicable) 31 December 1986

DEPARTMENT OF THE ARMY
PERMIT

Referring to written request dated 23 April 1979 for a permit to:

(X) Perform work in or affecting navigable waters of the United States, upon the recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403);

(X) Discharge dredged or fill material into waters of the United States upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 404 of the Federal Water Pollution Control Act (86 Stat. 816, P.L. 92-500

( ) Transport dredged material for the purpose of dumping it into ocean waters upon the issuance of a permit from the Secretary of th Army acting through the Chief of Engineers pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 197 (86 Stat. 1052; P.L. 92-532);

Metropolitan Dade County Seaport
1015 North American Way, Room 210
Miami, Florida 33132

is hereby authorized by the Secretary of the Army:

to dredge 11,400,000 cubic yards, fill with 5,020,000 cubic yards, construct steel sheet piling bulkheads, and install concrete shoreline wharves with support pilings , also install subaqueous pipes.

in waters of the United States, Biscayne Bay, and its adjacent wetlands

at Dodge, Lummus, Sam's, and Fisher Islands in Miami, Dade County, Florida

in accordance with the plans and drawings attached hereto which are incorporated in and made a part of this permit (on drawings give file number or other definite identification marks.)

Drawings 1 through 16, and Addendum

subject to the following conditions:

I. General Conditions:

a. That all activities identified and authorized herein shall be consistent with the terms and conditions of this permit; and that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth more specifically in General Conditions j or k hereto, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this permit has been previously modified, suspended or revoked in whole or in part.

ENG FORM 1 JUL 77 1721 EDITION OF 1 APR 74 IS OBSOLETE. (ER 1145-2-303)

b. That all activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States or ocean waters, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, pretreatment standards and management practices established pursuant to the Federal Water Pollution Control Act of 1972 (P.L. 92-500; 86 Stat. 816), the Marine Protection, Research and Sanctuaries Act of 1972 (P.L. 92-532, 86 Stat. 1052), or pursuant to applicable State and local law.

c. That when the activity authorized herein involves a discharge during its construction or operation, of any pollutant (including dredged or fill material), into waters of the United States, the authorized activity shall, if applicable water quality standards are revised or modified during the term of this permit, be modified, if necessary, to conform with such revised or modified water quality standards within 6 months of the effective date of any revision or modification of water quality standards, or as directed by an implementation plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.

d. That the discharge will not destroy a threatened or endangered species as identified under the Endangered Species Act, or endanger the critical habitat of such species.

e. That the permittee agrees to make every reasonable effort to prosecute the construction or operation of the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife, and natural environmental values.

f. That the permittee agrees that he will prosecute the construction or work authorized herein in a manner so as to minimize any degradation of water quality.

g. That the permittee shall permit the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

h. That the permittee shall maintain the structure or work authorized herein in good condition and in accordance with the plans and drawings attached hereto.

i. That this permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and that it does not authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations nor does it obviate the requirement to obtain State or local assent required by law for the activity authorized herein.

j. That this permit may be summarily suspended, in whole or in part, upon a finding by the District Engineer that immediate suspension of the activity authorized herein would be in the general public interest. Such suspension shall be effective upon receipt by the permittee of a written notice thereof which shall indicate (1) the extent of the suspension, (2) the reasons for this action, and (3) any corrective or preventative measures to be taken by the permittee which are deemed necessary by the District Engineer to [illegible] imminent hazards to the general public interest. The permittee shall take immediate action to comply with the provisions of this notice. Within ten days following receipt of this notice of suspension, the permittee may request a hearing in order to present information relevant to a decision as to whether his permit should be reinstated, modified or revoked. If a hearing is requested, it shall be conducted pursuant to procedures prescribed by the Chief of Engineers. After completion of the hearing, or within a reasonable time after issuance of the suspension notice to the permittee if no hearing is requested, the permit will either be reinstated, modified or revoked.

k. That this permit may be either modified, suspended or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest. Any such modification, suspension, or revocation shall become effective 30 days after receipt by the permittee of written notice of such action which shall specify the facts or conduct warranting same unless (1) within the 30-day period the permittee is able to satisfactorily demonstrate that (a) the alleged violation of the terms and the conditions of this permit did not, in fact, occur or (b) the alleged violation was accidental, and the permittee has been operating in compliance with the terms and conditions of the permit and is able to provide satisfactory assurances that future operations shall be in full compliance with the terms and conditions of this permit or (2) within the aforesaid 30-day period, the permittee requests that a public hearing be held to present oral and written evidence concerning the proposed modification, suspension or revocation. The conduct of this hearing and the procedures for making a final decision either to modify, suspend or revoke this permit in whole or in part shall be pursuant to procedures prescribed by the Chief of Engineers.

l. That in issuing this permit, the Government has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Government may, in addition, institute appropriate legal proceedings.

m. That any modification, suspension, or revocation of this permit shall not be the basis for any claim for damages against the United States.

n. That the permittee shall notify the District Engineer at what time the activity authorized herein will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of any suspension of work, if for a period of more than one week, resumption of work and its completion.

o. That if the activity authorized herein is not started on or before _____ day of _____ 19 _____ (one year from the date of issuance of this permit unless otherwise specified) and is not completed on or before _____ day of _____, 19 _____ (three years from the date of issuance of this permit unless otherwise specified) this permit, if not previously revoked or specifically extended, shall automatically expire.

p. That this permit does not authorize or approve the construction of particular structures, the authorization or approval of which may require authorization by the Congress or other agencies of the Federal Government.

q. That if and when the permittee desires to abandon the activity authorized herein, unless such abandonment is part of a transfer procedure by which the permittee is transferring his interests herein to a third party pursuant to General Condition t hereof, he must restore the area to a condition satisfactory to the District Engineer.

r. That if the recording of this permit is possible under applicable State or local law, the permittee shall take such action as may be necessary to record this permit with the Register of Deeds or other appropriate official charged with the responsibility for maintaining records of title to and interests in real property.

s. That there shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.

t. That this permit may not be transferred to a third party without prior written notice to the District Engineer, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit in the space provided below and thereby agreeing to comply with all terms and conditions of this permit. In addition, if the permittee transfers the interests authorized herein by conveyance of realty, the deed shall reference this permit and the terms and conditions specified herein and this permit shall be recorded along with the deed with the Register of Deeds or other appropriate official.

II. Special Conditions: (Here list conditions relating specifically to the proposed structure or work authorized by this permit):

a. Within 4 years from the date of issuance of this permit, 251 acres of unvegetated or sparsely vegetated Biscayne Bay bottoms and at least 5.6 acres of intertidal areas must be respectively planted with turtlegrass, shoalgrass, and halophila seagrasses and with mangroves equivalent to those lost as a result of project dredging and filling. Monitoring of all plant sites will be required through mid-1986.

b. Existing dredge holes, outside the project area, equivalent to 6,380,000 cubic yards in volume of clean sand and limerock from authorized dredging must be refilled to depths of surrounding Biscayne Bay bottoms to provide additional shallow water habitat in mitigation for those destroyed. Prior to actual implementation of the requirement, the Metropolitan Dade County Seaport Department has the opportunity to request a modification deleting this requirement. However, such a modification will only be approved if the Jacksonville District determines that it is necessary from information provided, in part, by the Seaport Department. Turbidity curtains will be installed surrounding both the authorized dredge areas and the dredge holes to be filled at all times during active operations.

c. In regard to protection of the endangered species, the Florida manatee (Trichechus manatee):

(1) The Contractor will instruct all personnel associated with the construction project about the presence of manatees in the area and the need to avoid collisions with manatees. All vessels associated with the project shall operate at "no wake" speeds at all times while in shallow water, or channels, where the draft of the boat provides less than 3-foot clearance of the bottom. Boats used to transport personnel shall be shallow draft vessels, preferably of the light-displacement category, where the landing and the dredge shall follow routes of deep water to the extent possible. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Endangered Species Act and the Marine Mammal Protection Act. The Contractor shall be held responsible for any manatee harmed, harassed, or killed as a result of the construction of the project.

79B-0623
METROPOLITAN DADE COUNTY SEAPORT DEPARTMENT

SPECIAL CONDITIONS CONTINUED

(2) The Contractor shall keep a log detailing all sightings, collisions, damage, or killing of manatees which have occurred during the contract period. Any collision with a manatee will be reported immediately to the Chief, Environment and Resources Branch and the FWS, Jacksonville Area Office. Following project completion, a report summarizing the above incidents shall be submitted both to the Chief, Environment and Resources Branch and the FWS, Jacksonville Area Office.

(3) If there are any significant modifications made in the selected alternatives, or if additional information becomes available regarding potential impacts to any endangered species, then Section 7 consultation will be reinitiated between the FWS and the Jacksonville District.

d. Although monitoring of compliance with items a, b, and c, above, will be the joint responsibility of the Metropolitan Dade County Seaport Department and its contractors, the Dade County DERM, DER, the South Florida RPC, and the FWS, final decisions indicating approval, modification, or denial of alternatives and the success thereof, in order to execute the intent of this permit and its special conditions will be the sole responsibility fo the Jacksonville District.

The following Special Conditions be applicable when appropriate:

STRUCTURES IN OR AFFECTING NAVIGABLE WATERS OF THE UNITED STATES:

a. That this permit does not authorize the interference with any existing or proposed Federal project and that the permittee shall not be entitled to compensation for damage or injury to the structures or work authorized herein which may be caused by or result from existing or future operations undertaken by the United States in the public interest.

b. That no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized by this permit.

c. That if the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.

d. That the permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the authorized structure or work, shall, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the waterway to its former conditions. If the permittee fails to comply with the direction of the Secretary of the Army or his authorized representative, the Secretary or his designee may restore the waterway to its former condition, by contract or otherwise, and recover the cost thereof from the permittee.

e. Structures for Small Boats: That permittee hereby recognizes the possibility that the structure permitted herein may be subject to damage by wave wash from passing vessels. The issuance of this permit does not relieve the permittee from taking all proper steps to insure the integrity of the structure permitted herein and the safety of boats moored thereto from damage by wave wash and the permittee shall not hold the United States liable for any such damage.

MAINTENANCE DREDGING:

a. That when the work authorized herein includes periodic maintenance dredging, it may be performed under this permit for _____ years from the date of issuance of the permit (ten years unless otherwise indicated);

b. That the permittee will advise the District Engineer in writing at least two weeks before he intends to undertake any maintenance dredging.

DISCHARGES OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES:

a. That the discharge will be carried out in conformity with the goals and objectives of the EPA Guidelines established pursuant to Section 404(b) of the FWPCA and published in 40 CFR 230;

b. That the discharge will consist of suitable materials free from toxic pollutants in other than trace quantities;

c. That the fill created by the discharge will be properly maintained to prevent erosion and other non-point sources of pollution; and

d. That the discharge will not occur in a component of the National Wild and Scenic River System or in a component of a State wild and scenic river system.

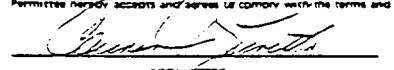
DUMPING OF DREDGED MATERIAL INTO OCEAN WATERS:

a. That the dumping will be carried out in conformity with the goals, objectives, and requirements of the EPA criteria established pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, published in 40 CFR 220-228.

b. That the permittee shall place a copy of this permit in a conspicuous place in the vessel to be used for the transportation and/or dumping of the dredged material as authorized herein.

This permit shall become effective on the date of the District Engineer's signature.

Permittee hereby accepts and agrees to comply with the terms and conditions of this permit.

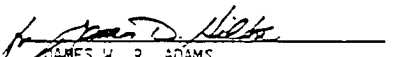


PERMITTEE

12-5-79

DATE

BY AUTHORITY OF THE SECRETARY OF THE ARMY:



JAMES W. R. ADAMS
Colonel, Corps of Engineers

DISTRICT ENGINEER
U.S. ARMY CORPS OF ENGINEERS

OCT 5 1980

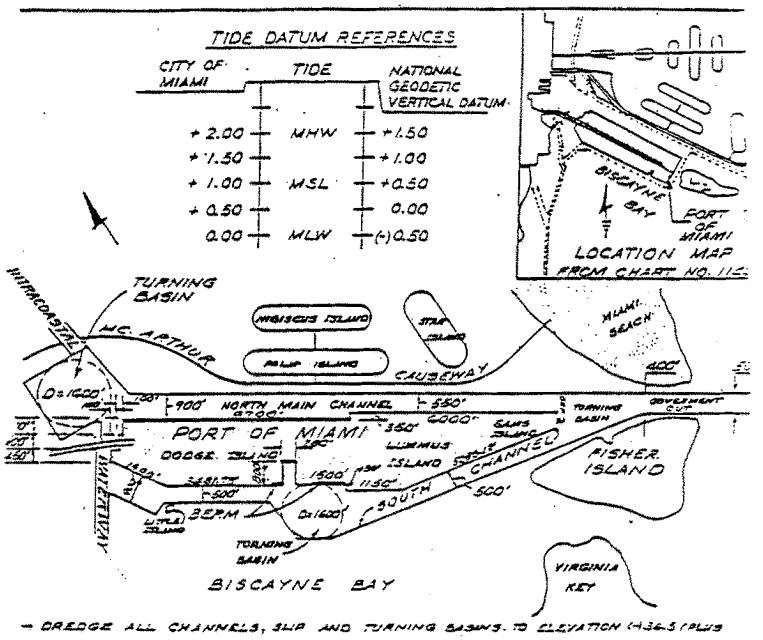
DATE

Transferee hereby agrees to comply with the terms and conditions of this permit.

TRANSFEREE

DATE

PROPOSED PORT OF MIAMI CHANNEL PLAN



- DREDGE ALL CHANNELS, SLIP AND TURNING BASINS TO ELEVATION (-)34.5 (PLUS ONE FT OVERDREDGE).
- BERM TO BE MAINTAINED (EXISTING DEPTH OF WATER) AT LOCATIONS INDICATED.
- FILL TO ELEVATION +8.0 AT DODGE ISLAND AND ELEVATION +12.0 AT LUMMUS ISLAND & SAM'S ISLAND.
- AIDS TO NAVIGATION IN PROPOSED DREDGE AREAS TO BE RELOCATED.

PROPOSED: DREDGING, FILLING AND BULKHEADING

DATUM: N.G.V.D.

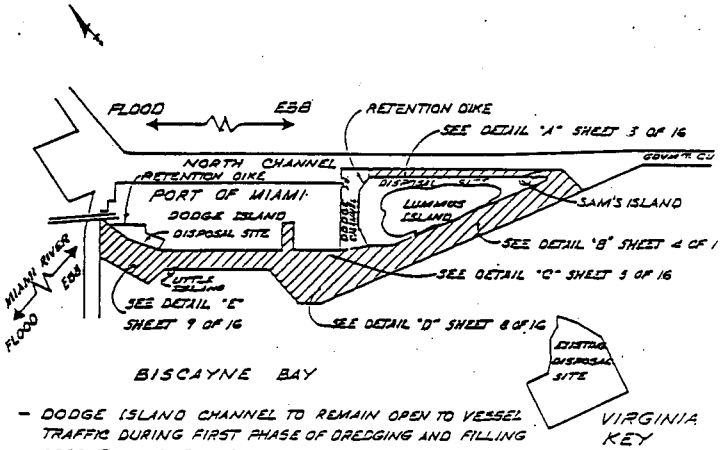
1. CITY OF MIAMI
2. CITY OF MIAMI BEACH
3. LUMMUS ISLAND, INC.
4. FISHER ISLAND, INC.
5. BELCHER OIL CO

A. BISCAYNE BAY
B. PORT OF MIAMI

DADE COUNTY SEAPORT DEPARTMENT

REV. JUNE 1973

PROPOSED PORT OF MIAMI
DREDGE AND FILL AREAS

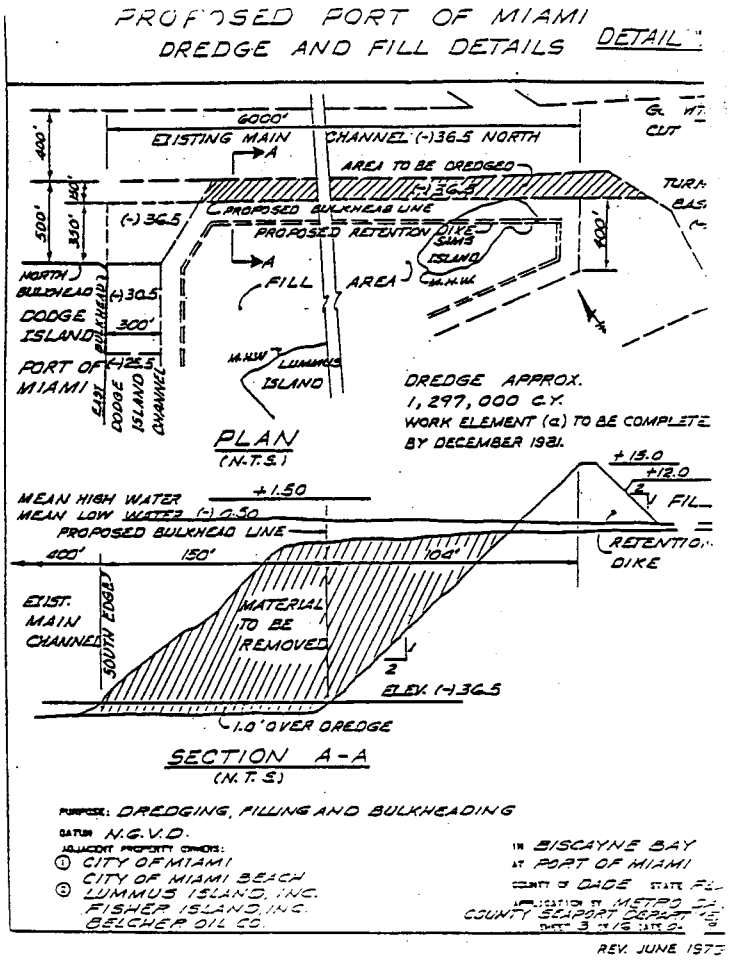


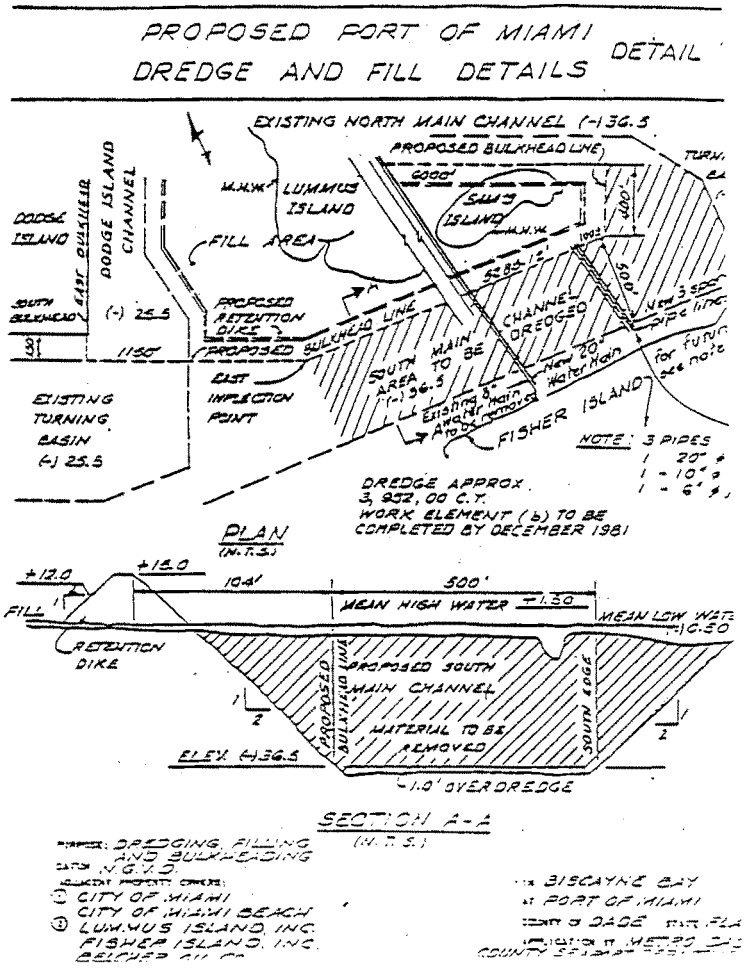
- DODGE ISLAND CHANNEL TO REMAIN OPEN TO VESSEL TRAFFIC DURING FIRST PHASE OF DREDGING AND FILLING OPERATION. SEE DETAIL "K" SHEET 13 OF 16.
- ALL DREDGING AND FILLING WORK ELEMENTS TO BE COMPLETED BY DECEMBER 1984.

PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER O.I. CO.

IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
SHEET 2 OF 16 SHEETS

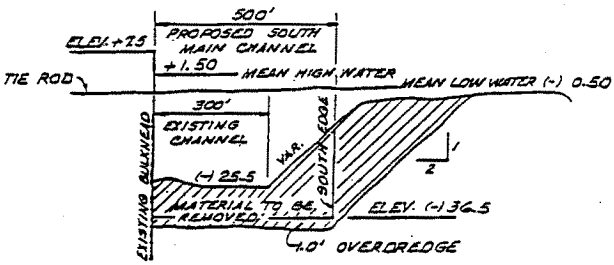
REV. JUNE 1979


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "
6000'
EXISTING MAIN CHANNEL (-)36.5 NORTH
AREA TO BE DREDGED
(-)36.5
PROPOSED BULKHEAD LINE
PROPOSED RETENTION DIKE
SUMS ISLAND
FILL AREA
M.H.W.
LUMMUS ISLAND
NORTH BULKHEAD
DODGE ISLAND
PORT OF MIAMI
EAST DODGE ISLAND CHANNEL
400'
500'
330'
300'
400'
(-)30.5
(-)25.5
DREDGE APPROX.
1,297,000 C.Y.
WORK ELEMENT (a) TO BE COMPLETE
BY DECEMBER 1981.
PLAN
(N.T.S.)
+15.0
+12.0
MEAN HIGH WATER +1.50
MEAN LOW WATER (-)0.50
PROPOSED BULKHEAD LINE
400'
150'
100'
RETENTION DIKE
EXIST. MAIN CHANNEL
SOUTH EDGE
MATERIAL TO BE REMOVED
2
ELEV. (-)36.5
1.0' OVER DREDGE
SECTION A-A
(N.T.S.)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
1 CITY OF MIAMI
2 CITY OF MIAMI BEACH
LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE
COUNTY SEAPORT DEPART
REV. JUNE 197


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL
EXISTING NORTH MAIN CHANNEL (-)36.5
PROPOSED BULKHEAD LINE
DODGE ISLAND
DODGE ISLAND CHANNEL
EAST DISSILIER
M.H.W.
LUMMUS ISLAND
FILL AREA
SWIG ISLAND
600'
400'
SOUTH BULKHEAD
(-) 25.5
PROPOSED RETENTION DIKE
PROPOSED BULKHEAD LINE
1150'
EAST INFLECTION POINT
EXISTING TURNING BASIN (-) 25.5
SOUTH MAIN AREA TO BE (-)36.5
CHANNEL DREDGED
New 3 sewer pipe lines for future use
New 20" Water Main
Existing 8" water main to be removed
FISHER ISLAND
NOTE: 3 PIPES
1 - 20"
1 - 10"
1 - 6"
DREDGE APPROX. 3,932,00 C.Y.
WORK ELEMENT (b) TO BE COMPLETED BY DECEMBER 1981
PLAN
(N.T.S.)
+12.0
+8.0
10.4'
500'
MEAN HIGH WATER +1.50
MEAN LOW WATER +0.50
FILL
RETENTION DIKE
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL
SOUTH EDGE
MATERIAL TO BE REMOVED
ELEV. (-)36.5
-1.0' OVER DREDGE
SECTION A-A
(N.T.S.)
DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
SOLICITOR PROPERTY OWNERS:
(a) CITY OF MIAMI
CITY OF MIAMI BEACH
LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BISCAYNE BAY
PORT OF MIAMI
DADE

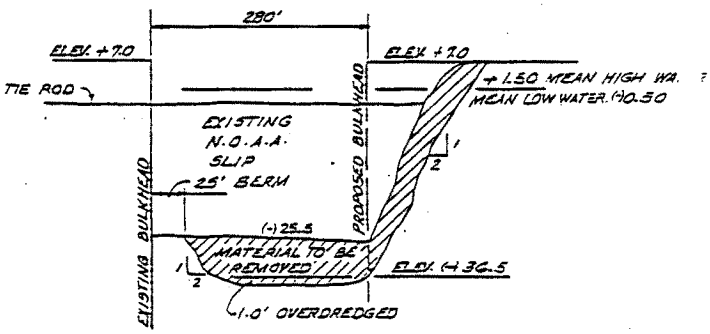
PROPOSED PORT OF MIA.. 11
DREDGE AND FILL DETAILS

DETAIL "C"



SECTION B-B
(N.T.S.)

FOR LOCATION & NOTES SEE SHEET 5 of 16



SECTION C-C
(N.T.S.)

FOR LOCATION & NOTES SEE SHEET 5 of 16

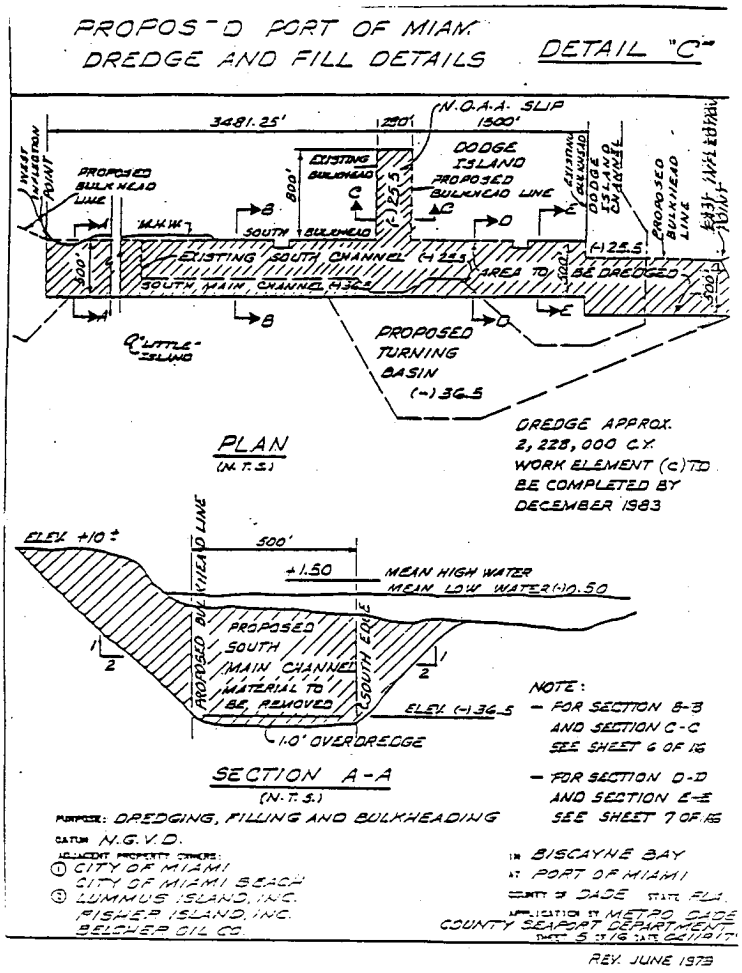
PURPOSE: DREDGING, FILLING AND BULKHEADING

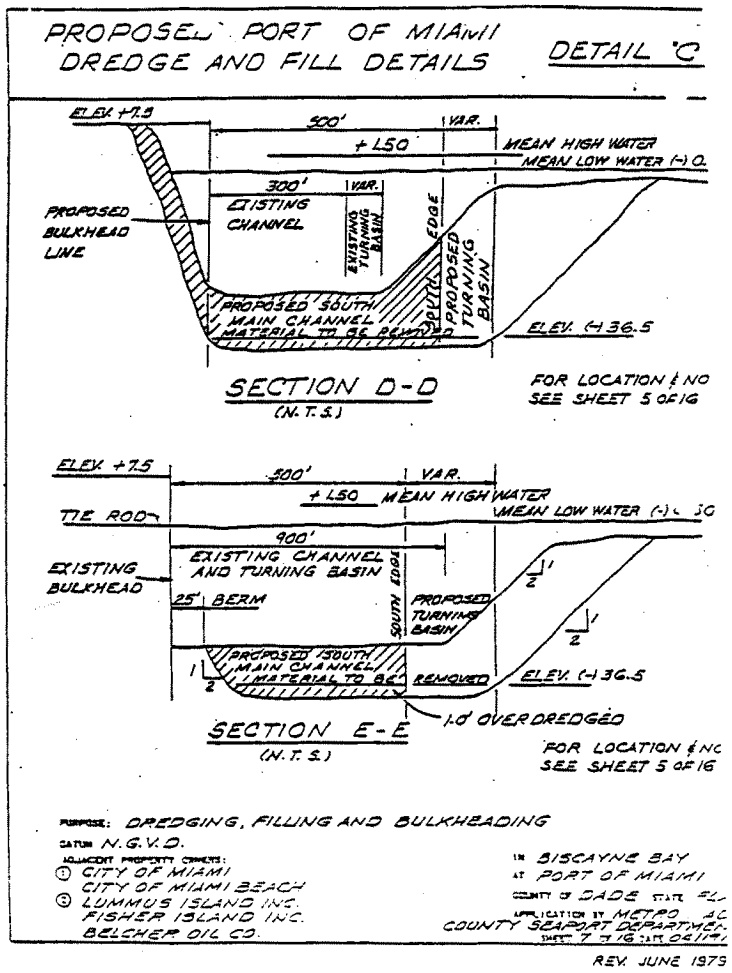
DATUM N.G.V.D.

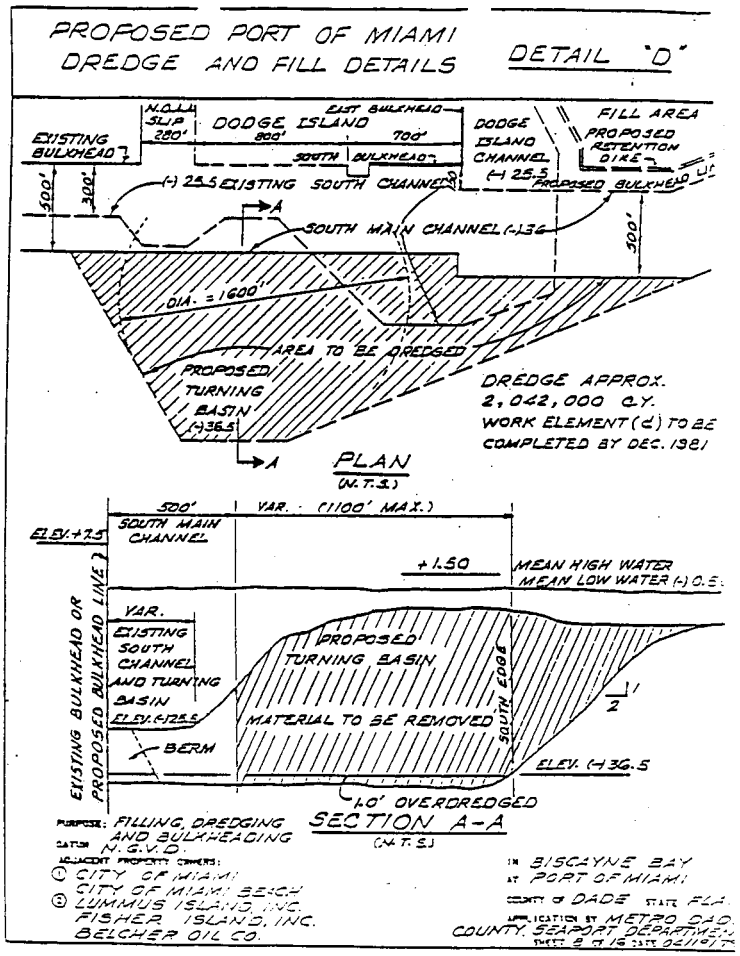
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
CITY OF MIAMI BEACH
② LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.

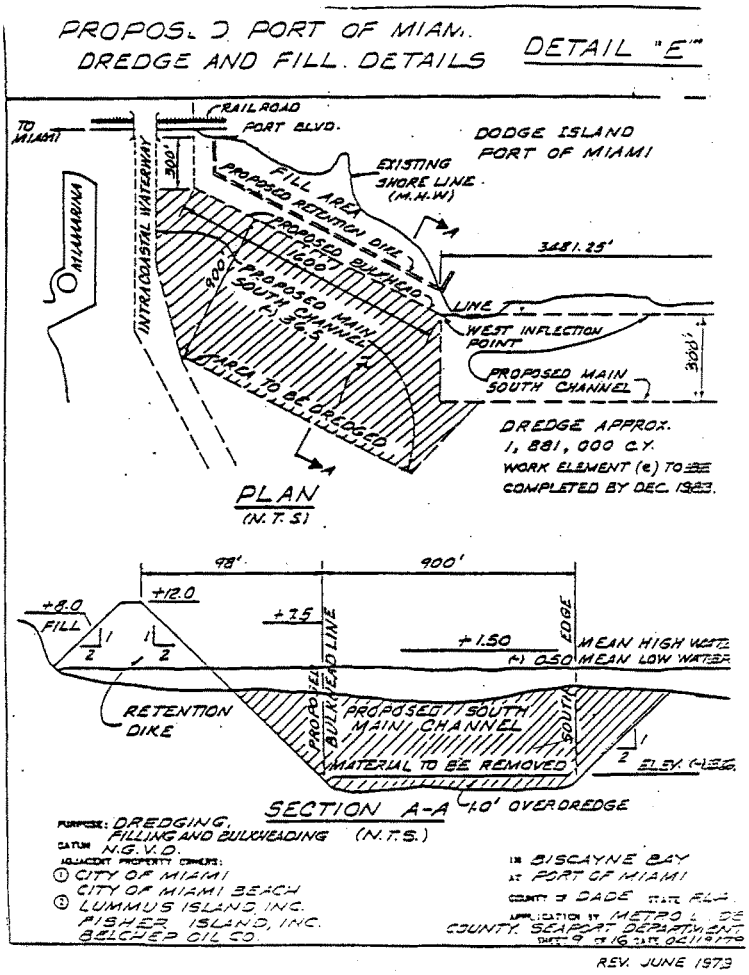
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA
APPLICATION BY METRO D. ...E
COUNTY SEAPORT DEPT. ...
SHEET 6 OF 16 SHTS. DATE 10/19/70

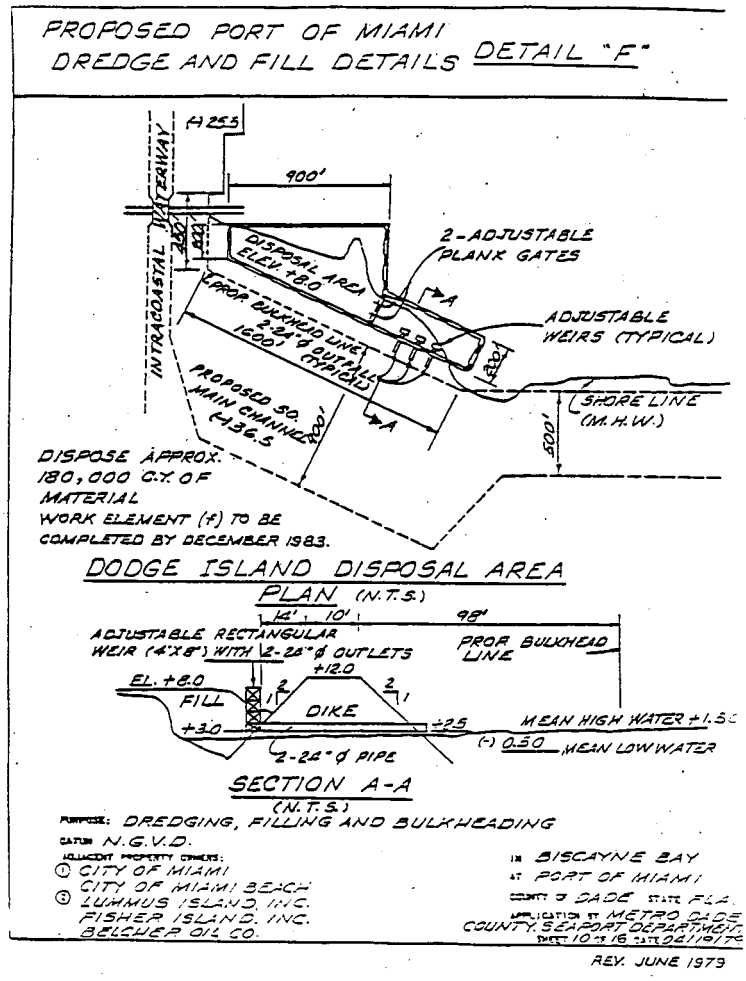
REV. JUNE 1973


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "C"
3481.25'
200'
(N.O.A.A. SLIP
1500'
DODGE ISLAND
PROPOSED BULKHEAD LINE
EXISTING BULKHEAD
PROPOSED BULK HEAD LINE
INNER INTRACOASTAL WATERWAY
M.H.W.
SOUTH BULKHEAD
EXISTING SOUTH CHANNEL
SOUTH MAIN CHANNEL
AREA TO BE DREDGED
PROPOSED BULKHEAD LINE
PROPOSED TURNING BASIN
(-)36.5
PLAN
(N.T.S.)
DREDGE APPROX.
2,228,000 C.Y.
WORK ELEMENT (c) TO BE COMPLETED BY DECEMBER 1983
ELEV. +10 ±
500'
+1.50
MEAN HIGH WATER
MEAN LOW WATER (-)0.50
PROPOSED BULKHEAD LINE
SOUTH EDGE
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
ELEV. (-)36.5
1.0' OVERDREDGE
SECTION A-A
(N.T.S.)
NOTE:
- FOR SECTION B-B AND SECTION C-C SEE SHEET 6 OF 16
- FOR SECTION D-D AND SECTION E-E SEE SHEET 7 OF 16
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
1 CITY OF MIAMI
CITY OF MIAMI BEACH
2 LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
DATE SITING ARE (1) (2) (7)
REV. JUNE 1978

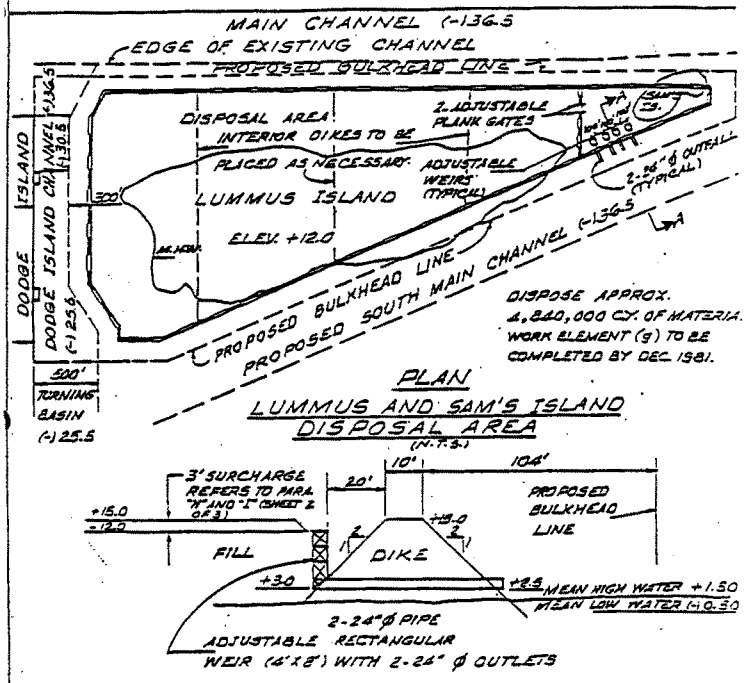

PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL 'C'
ELEV. +7.5
500'
VAR.
+ L50
MEAN HIGH WATER
MEAN LOW WATER (-) 0.
300'
VAR.
EXISTING CHANNEL
EXISTING TURNING BASIN
SOUTH EDGE
PROPOSED TURNING BASIN
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
ELEV. (-) 36.5
SECTION D-D
(N.T.S.)
FOR LOCATION & NO SEE SHEET 5 OF 16
ELEV. +7.5
500'
VAR.
+ L50
MEAN HIGH WATER
TIE ROD
MEAN LOW WATER (-)
900'
EXISTING BULKHEAD
EXISTING CHANNEL AND TURNING BASIN
25' BERM
SOUTH EDGE
PROPOSED TURNING BASIN
1/2
1/2
1
2
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
ELEV. (-) 36.5
1.0' OVERDREDGED
SECTION E-E
(N.T.S.)
FOR LOCATION & NO SEE SHEET 5 OF 16
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
CITY OF MIAMI BEACH
② LUMMUS ISLAND INC.
FISHER ISLAND INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FL
APPLICATION BY METRO
COUNTY SEAPORT DEPARTMENT
SHEET 7 OF 16 SHEETS OF ENG. NO.
REV. JUNE 1979


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "D"
EXISTING BULKHEAD
N.O.L.L. SLIP 280'
DODGE ISLAND
EAST BULKHEAD
800'
700'
SOUTH BULKHEAD
DODGE ISLAND CHANNEL
(-) 25.5
FILL AREA
PROPOSED RETENTION DIKE
PROPOSED BULKHEAD LINE
500'
300'
(-) 25.5 EXISTING SOUTH CHANNEL
SOUTH MAIN CHANNEL (-)36
DIA. = 1600'
AREA TO BE DREDGED
PROPOSED TURNING BASIN (-)36.5
DREDGE APPROX. 2,042,000 C.Y.
WORK ELEMENT (d) TO BE COMPLETED BY DEC. 1981
PLAN
(N.T.S.)
500'
VAR. (1100' MAX.)
ELEV. +7.5
SOUTH MAIN CHANNEL
+1.50
MEAN HIGH WATER
MEAN LOW WATER (-) 0.5
EXISTING BULKHEAD OR PROPOSED BULKHEAD LINE
VAR.
EXISTING SOUTH CHANNEL AND TURNING BASIN
ELEV. (-)25.5
BERM
PROPOSED TURNING BASIN
MATERIAL TO BE REMOVED
SOUTH SLOPE
1/2
1
ELEV. (-)36.5
1.0' OVERDREDGED
SECTION A-A
(N.T.S.)
PURPOSE: FILLING, DREDGING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
CITY OF MIAMI BEACH
② LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY, SEAPORT DEPARTMENT
SHEET 2 OF 16 DATE 02/19/79
REV. JUNE 1979


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "E"
TO MIAMI
RAILROAD
PORT BLVD.
DODGE ISLAND
PORT OF MIAMI
EXISTING SHORE LINE (M.H.W.)
FILL AREA
PROPOSED RETENTION DIKE
PROPOSED BULKHEAD LINE
MIAMARINA
INTRACOASTAL WATERWAY
300'
900'
1600'
PROPOSED MAIN SOUTH CHANNEL (-) 35.0
AREA TO BE DREDGED
3481.25'
WEST INFLECTION POINT
PROPOSED MAIN SOUTH CHANNEL
3100'
DREDGE APPROX. 1,881,000 C.Y.
WORK ELEMENT (e) TO BE COMPLETED BY DEC. 1983.
PLAN
(N.T.S.)
98'
900'
+8.0
FILL
+12.0
+7.5
+1.50
MEAN HIGH WATER
(-) 0.50 MEAN LOW WATER
PROPOSED BULKHEAD LINE
EDGE
RETENTION DIKE
PROPOSED SOUTH MAIN CHANNEL
MATERIAL TO BE REMOVED
EL SV. (-)35.0
SECTION A-A
4.0' OVERDREDGE
(N.T.S.)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
CITY OF MIAMI BEACH
② LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO. DADE COUNTY SEAPORT DEPARTMENT
SHEET 9 OF 16 DATE 06/19/79
REV. JUNE 1979


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "F"
INTRACOASTAL WATERWAY
(-) 25.5
900'
2-ADJUSTABLE PLANK GATES
DISPOSAL AREA ELEV. +8.0
PROP. BULKHEAD LINE
2-24" ø OUTFALL (TYPICAL)
1600'
ADJUSTABLE WEIRS (TYPICAL)
PROPOSED 30' MAIN CHANNEL (-) 36.5
SHORE LINE (M. H. W.)
500'
DISPOSE APPROX. 180,000 C.Y. OF MATERIAL
WORK ELEMENT (F) TO BE COMPLETED BY DECEMBER 1983.
DODGE ISLAND DISPOSAL AREA
PLAN (N.T.S.)
14'
10'
98'
ADJUSTABLE RECTANGULAR WEIR (4'X8') WITH 2-24" ø OUTLETS
PROP. BULKHEAD LINE
+12.0
EL. +8.0
FILL
DIKE
+3.0
+2.5
MEAN HIGH WATER +1.5
(-) 0.50 MEAN LOW WATER
2-24" ø PIPE
SECTION A-A
(N.T.S.)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
③ LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
SHEET 10 OF 16 DATE 02/19/79
REV. JUNE 1979

PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS DETAIL "G"



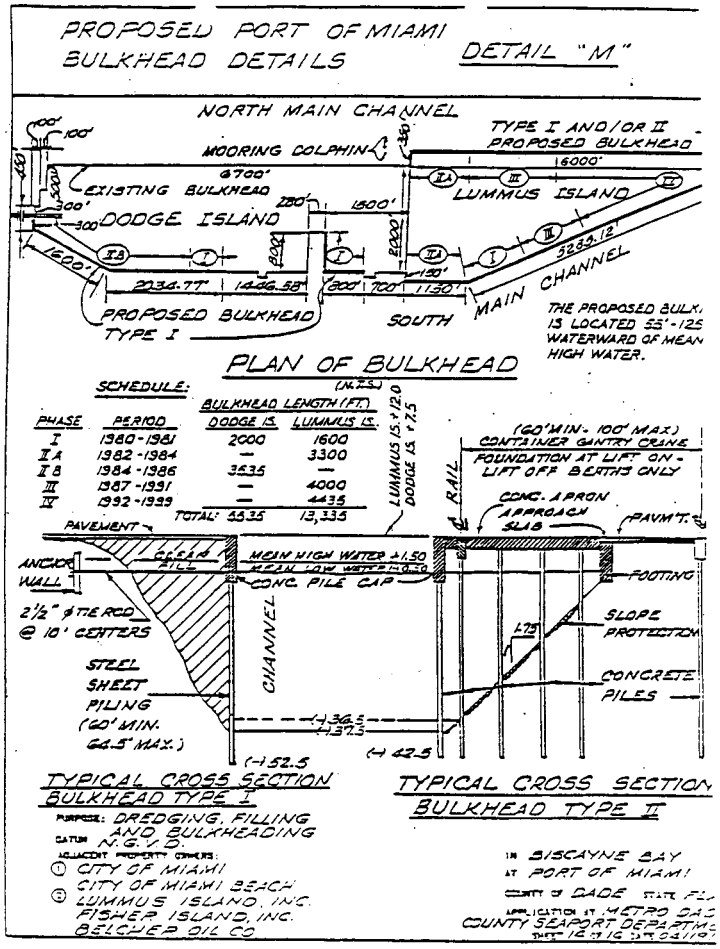
PLAN
LUMMUS AND SAM'S ISLAND
DISPOSAL AREA
(N.T.S.)

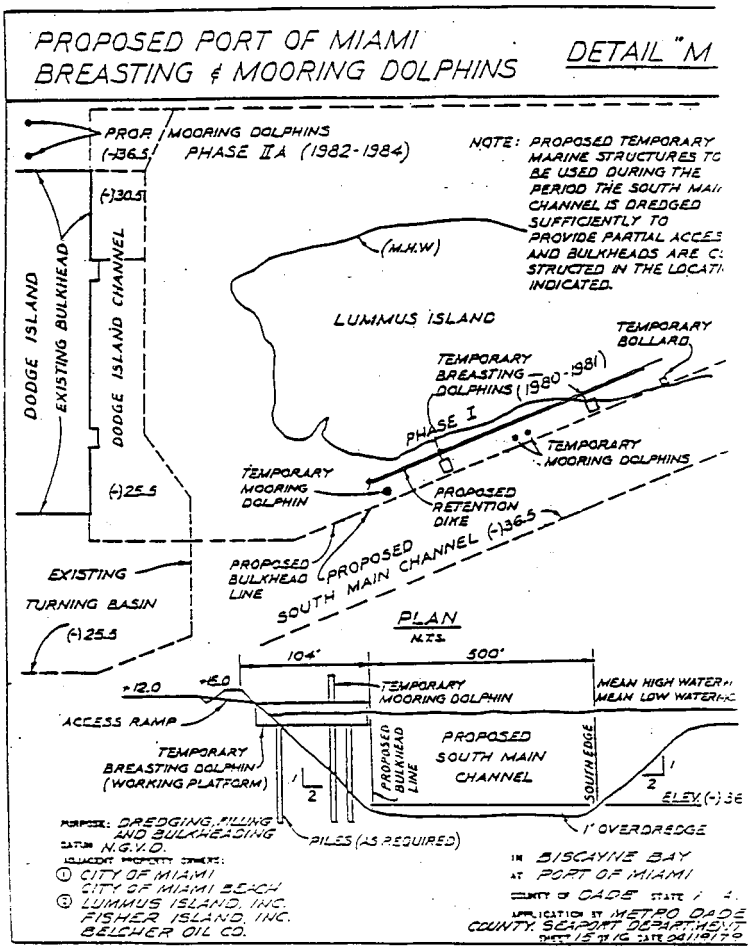
SECTION A-A
(N.T.S.)

PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.

IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FL
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
SHEET 11 OF 16 DATE 06/11/79

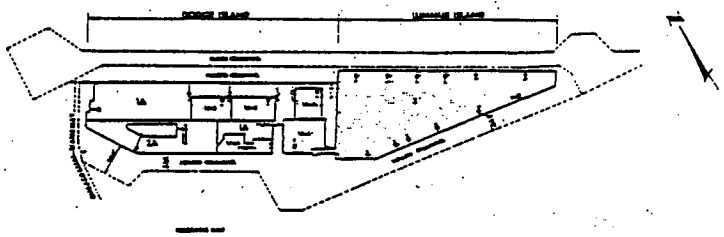
REV. JUNE 1979


PROPOSED PORT OF MIAMI
BULKHEAD DETAILS
DETAIL "M"
NORTH MAIN CHANNEL
MOORING COLPHIN
TYPE I AND/OR II
PROPOSED BULKHEAD
EXISTING BULKHEAD
DODGE ISLAND
LUMMUS ISLAND
SOUTH MAIN CHANNEL
PROPOSED BULKHEAD
TYPE I
THE PROPOSED BULK
IS LOCATED 55'-125
WATERWARD OF MEAN
HIGH WATER.
PLAN OF BULKHEAD
SCHEDULE:
PHASE
PERIOD
BULKHEAD LENGTH (FT.)
DODGE IS.
LUMMUS IS.
I 1980-1981 2000 1600
II A 1982-1984 — 3300
II B 1984-1986 3535 —
III 1987-1991 — 4000
IV 1992-1999 — 4435
TOTAL: 5535 13,335
LUMMUS IS. +12.0
DODGE IS. +7.5
(60' MIN.-100' MAX.)
CONTAINER GANTRY CRANE
FOUNDATION AT LIFT ON-
LIFT OFF BERTHS ONLY
RAIL
CONC. APRON
APPROACH
SLAB
PAVM'T.
PAVEMENT
ANCHOR
WALL
2½" ø TIE ROD
@ 10' CENTERS
STEEL
SHEET
PILING
(60' MIN.
62.5' MAX.)
CHANNEL
MEAN HIGH WATER +1.50
CONC. PILE CAP
FOOTING
SLOPE
PROTECTION
CONCRETE
PILES
(-) 36.5
(-) 37.3
(-) 42.5
(-) 52.5
TYPICAL CROSS SECTION
BULKHEAD TYPE I
PURPOSE: DREDGING, FILLING
AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO
TYPICAL CROSS SECTION
BULKHEAD TYPE II
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA
APPLICATION OF METRO DAD
COUNTY SEAPORT DEPARTM
REV. JUNE 1979

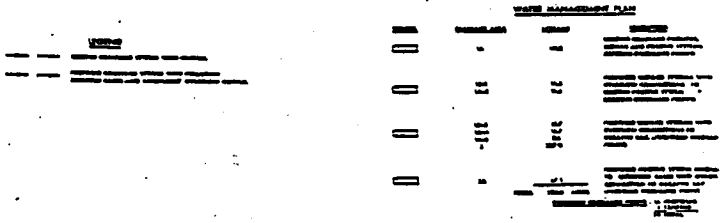

PROPOSED PORT OF MIAMI
BREASTING & MOORING DOLPHINS
DETAIL "M
PROP. MOORING DOLPHINS
PHASE IIA (1982-1984)
(-)36.5
(-)30.5
DODGE ISLAND
EXISTING BULKHEAD
DODGE ISLAND CHANNEL
(M.H.W.)
LUMMUS ISLAND
TEMPORARY BOLLARD
TEMPORARY BREASTING DOLPHINS (1980-1981)
PHASE I
TEMPORARY MOORING DOLPHINS
TEMPORARY MOORING DOLPHIN
PROPOSED RETENTION DIKE
(-)25.5
EXISTING TURNING BASIN
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL
(-)36.5
PLAN
N.T.S.
104'
500'
+12.0
+5.0
TEMPORARY MOORING DOLPHIN
MEAN HIGH WATER
MEAN LOW WATER
ACCESS RAMP
TEMPORARY BREASTING DOLPHIN (WORKING PLATFORM)
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL
SOUTH EDGE
1
2
ELEV. (-) 36
1' OVERDREDGE
PILES (AS REQUIRED)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
CITY OF MIAMI BEACH
② LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE OF
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
SHEET 15 OF 16 DATE 08/19/79
NOTE: PROPOSED TEMPORARY MARINE STRUCTURES TO BE USED DURING THE PERIOD THE SOUTH MAIN CHANNEL IS DREDGED SUFFICIENTLY TO PROVIDE PARTIAL ACCESS AND BULKHEADS ARE CONSTRUCTED IN THE LOCATION INDICATED.
REV. JUNE 1979

PORT OF MIAMI
DRAINAGE DETAILS

APPENDIX "A"
COE # 79-0623
DER #

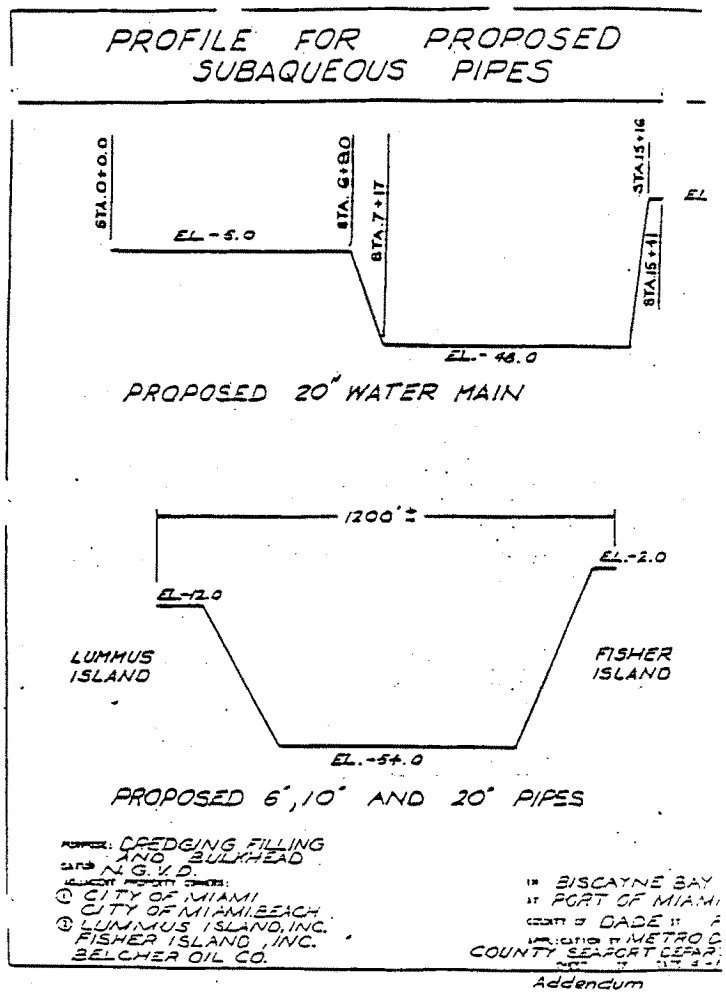


PLAN
(N.T.S.)



PURPOSE: DREDGING, FILLING AND BULKHEADING, AND DRAINAGE
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
③ LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.

IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA
APPLICATION BY: METRO DAC
COUNTY SEAPORT DEPARTM.


PROFILE FOR PROPOSED SUBAQUEOUS PIPES
STA. 0+0.0
EL. - 5.0
STA. 6+80
STA. 7+17
STA. 15+16
STA. 15+41
EL.
EL. - 48.0
PROPOSED 20" WATER MAIN
1200'±
EL.-12.0
EL.-2.0
LUMMUS ISLAND
FISHER ISLAND
EL.-54.0
PROPOSED 6", 10" AND 20" PIPES
DREDGING FILLING AND BULKHEAD
N.G.V.D.
① CITY OF MIAMI
CITY OF MIAMI BEACH
② LUMMUS ISLAND, INC.
FISHER ISLAND, INC.
BELCHER OIL CO.
BISCAYNE BAY
PORT OF MIAMI
DADE
METRO
COUNTY SEAPORT DEPAR
Addendum

003-006.0

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
FEDERAL BUILDING, P. O. BOX 4970
JACKSONVILLE, FLORIDA 32201

SAJOD-F
798-0623

JUN 16 1983

Mr. Carmen J. Lunetta, Director
Metropolitan Dade County Seaport
Department
1210 North American Way
Miami, Florida 33132

Dear Mr. Lunetta:

Thank you for your enlightening letter of 2 May 1983 concerning special condition (b) of Department of the Army permit 798-0623. The specific definition of available fill, dredge hole depths, refill quantities, and associated estimated monies available and costs involved reveal that only about $2 million could be engendered from sale of fill to apply to refilling only about 3 small and nearby dredge holes, requiring about 179,000 cubic yards of fill at a cost of about $1,790,000. All other such dredge holes are infeasibly distant and excessively costly.

The three subject holes are among the shallowest and are thus perceived to be environmentally sound and supporting biota whose further disturbance by refilling would not be warranted in view of the deleterious effects such further alteration would entail. In addition, utilization of the spoil to offset costs associated with utilization of and potential resultant expansion of East Everglades rock mines, lends credence to the reservation of this material for utilization towards reducing costs of Dade County public works projects requiring such fill material. (Of course, if used for any wetland fill proposals, written Department of the Army permit or disclaimer would be required prior to utilization by Dade County in such capacity.)

Therefore, the Jacksonville District, by copy of this letter, to be attached with permit 798-0623, hereby deletes special condition (b) from the permit and releases the spoil resulting from authorized dredging operations to the Metropolitan Dade County Seaport Department for use in Dade County public works projects requiring utilization of such material. All excess material, if not used in such fashion and sold for value should be utilized to insure the effective accomplishment of the approved final mitigation plan and then the priorities of the Biscayne Bay enhancement fund, as indicated in the enclosed letter of the Metropolitan Dade County Environmental Resources Management Department.

In the meantime, your continued cooperation in implementing permit 798-0623 special conditions a, c, and d is genuinely appreciated. We look forward to receiving the promised schedule of planting and the first of required quarterly status reports on the implementation of mitigative efforts.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

1 Incl
As stated

ROBERT J. WATERSTON III
Lt Col, Corps of Engineers
Commander and District Engineer

Cy Furn:
Mr. Luis Ajamil, P.E.
Post, Buckley, Schub & Jernigan
6850 SW 40th Street
Miami, Florida 33155

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT. CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232

SAJRD-P
798-0623

MAY 19 1983

Mr. Carmen J. Lunetta, Director
Metropolitan Dade County Seaport
Department
1015 North American Way
Miami, FL 33132

Dear Mr. Lunetta:

This office has reviewed the extensive and diverse qualitative data recently received relative to the Port of Miami's Seagrass Mitigation Project. From this review it is apparent that insufficient information has yet been developed from which to proceed with seagrass planting efforts this year.

The quantitative data from which valid conclusions may be drawn, is not anticipated to be complete until mid-fall of this year. This would include the results of monitoring scheduled for May/June and September/October.

In this regard, the amended monitoring survival criteria submitted on 10 March 1983 for modification are hereby approved. Complete monitoring data are requested to be submitted to this office by December, 1983. In the meantime, it is anticipated that quarterly progress reports will be furnished as they are prepared.

Thereafter, it is requested that prior to March 1984 the Port will present a plan to plant at least 107 acres of seagrasses in Biscayne Bay during the optimum planting season of April through August 1984. This plan shall include a program for implementation within this period, including necessary contracts, etc. An equal acreage is expected to be similarly planted in the spring/summer of 1985. Since these efforts will effectively postpone planting a year and related monitoring a total of 4 years, the expiration date of permit 79B-0623 must be and hereby is extended to 31 December 1987.

Regarding the required mangrove mitigation effort, it is understood that sufficient upland on the south mole island to Dinner Key Marina exists for conversion to intertidal elevations and replanting with mangrove vegetation. When County Commission approval is received, it is requested that a comprehensive plan be provided this office for implementation as soon as possible, preferably in time for optimum mangrove seed planting in midsummer of 1983.

MAY 19 8

If further complications arise, please notify this office immediately so that contingencies may be developed in a timely manner. In the meantime, you may consider permit 79B-0623 modified as indicated above and proceed accordingly.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

ALFRED B. DEVEREAUX, JR.
Colonel, Corps of Engineers
District Engineer

Cy Furn:
Dr. Armando Perez
Dr. Ron Gaby
Dr. Anitra Thorhaug

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO ATTENTION OF
Regulatory Division
Permits Branch
79[illegible]-0823

APR 3 1987

Mr. Carmen J. Lunetta, Director
Metropolitan Dade County
Seaport Department
1015 North American Way
Miami, Florida 33132-2019

Dear Mr. Lunetta:

We are writing in reference to your Department of the Army permit number 79[illegible]-0823. The permit was issued on October 6, 1980, to construct major port improvement at Dodge, Lummus, Sam's, and Fisher Islands, in Miami. Mr. Luis Ajamil, of Post, Buckley, Schuh, and Jernigan, Incorporated, has requested a time extension to the Department of the Army permit to match the expiration of your existing Florida Department of Environmental Regulation permit.

We have reviewed your request and have no objection to your proposed work schedule; therefore, the expiration date of your permit is hereby extended, as requested, for 1 year until December 1, 1988. An extension of the permit beyond that will require processing of a new permit application which Mr. Ajamil has submitted.

All other conditions of the existing permit remain in full force and effect, specifically including agreed to mitigation requirements. We are continuing to coordinate proposals for remainder of the mitigation requirements with the Fish and Wildlife Service, National Marine Fisheries Service, and Environmental Protection Agency. We feel it is important to clear up this mitigation issue before processing your new application.

We will provide you with our decision on what is required to complete this mitigation in the near future. You should attach this letter to the permit.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Charles T. Myers III
Colonel, Corps of Engineers
District Engineer

Copy Furnished:

Mr. Luis Ajamil
Post, Buckley, Schuh, and Jernigan,
Incorporated
6850 Southwest 40th Street
(Bird Road)
Miami, Florida 33155-3799

USACE Permit Number 79B-0623, as modified

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT. CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO ATTENTION OF

Regulatory Division
South Permits Branch
86IPO-20541

SEP 02 1988

Metropolitan Dade County Seaport
Department
c/o of Post, Buckley, Schuh,
and Jernigan, Incorporated
Attention: Mr. Luis Ajamil
8600 Northwest 36th Street
Miami, Florida 33166-6622

Dear Mr. Ajamil:

Reference is made to your letter dated March 30, 1988, in which you asked to revise the plans to perform work authorized by Department of the Army permit 79B-0623 issued on October 6, 1980. The proposed work is associated with expansion of the Port of Miami. You also asked for a time extension until March 7, 2001. Department of the Army permit 79B-0623 was extended on May 19, 1983.

The impacts of the proposed work on navigation and the environment have been evaluated and found to be insignificant. We have reviewed your request for a time extension and have no objection; therefore, the expiration date of your permit is hereby extended until March 7, 2001. All other conditions of the permit remain in full force and effect.

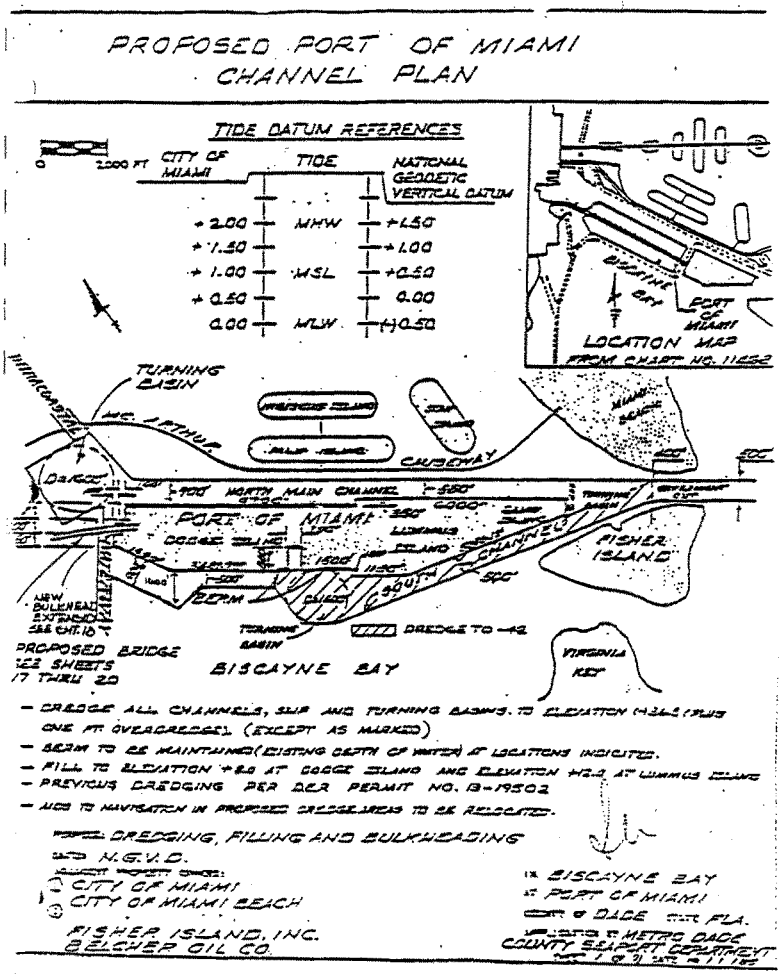
The permit is hereby modified in accordance with your request. You should attach this letter and the enclosed revised project plans to the permit.

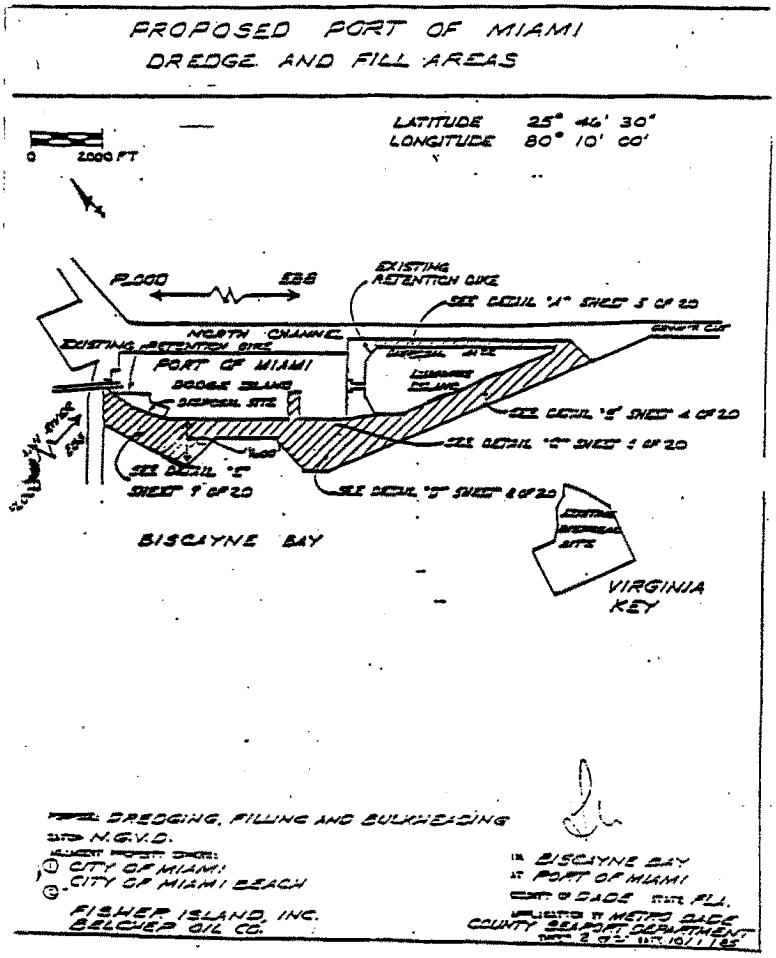
Thank you for your cooperation with our permit program.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Robert L. Herndon
Colonel, U.S. Army
District Engineer

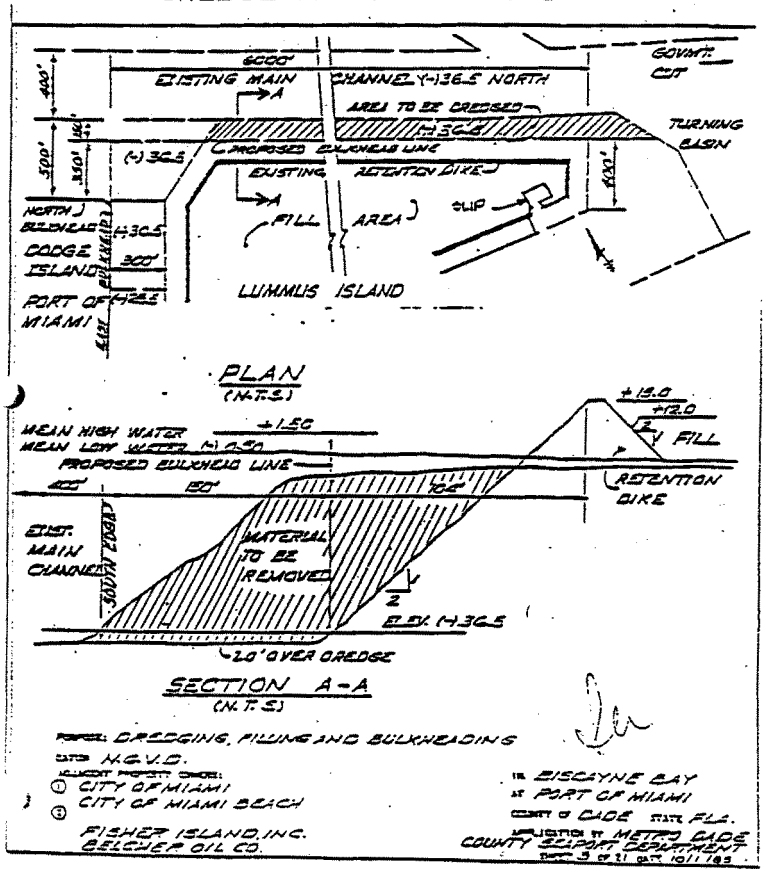
Enclosure


PROPOSED PORT OF MIAMI
CHANNEL PLAN
TIDE DATUM REFERENCES
CITY OF MIAMI
TIDE
NATIONAL GEODETIC VERTICAL DATUM
+2.00 MHW +1.50
+1.50 +1.00
+1.00 MSL +0.50
+0.50 0.00
0.00 MLW (-)0.50
LOCATION MAP
FROM CHART NO. 11452
TURNING BASIN
MAC ARTHUR CAUSEWAY
PORT OF MIAMI
FISHER ISLAND
DREDGE TO -42
VIRGINIA KEY
BISCAYNE BAY
PROPOSED BRIDGE
122 SHEETS
17 THRU 20
- DREDGE ALL CHANNELS, SLIP AND TURNING BASINS TO ELEVATION -34.5 (PLUS ONE FT OVERDREDGE) (EXCEPT AS MARKED)
- BERM TO BE MAINTAINED (EXISTING DEPTH OF WATER) AT LOCATIONS INDICATED.
- FILL TO ELEVATION +8.0 AT COCOE ISLAND AND ELEVATION +12.0 AT LUMMUS ISLAND
- PREVIOUS DREDGING PER ACE PERMIT NO. 13-19502
- AIDS TO NAVIGATION IN PROPOSED DREDGE AREAS TO BE RELOCATED.
DREDGING, FILLING AND BULKHEADING
N.G.V.D.
CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
BISCAYNE BAY
PORT OF MIAMI
DADE FLA.
METRO DADE COUNTY SEAPORT DEPARTMENT


PROPOSED PORT OF MIAMI
DREDGE AND FILL AREAS
LATITUDE 25° 46' 30"
LONGITUDE 80° 10' 00"
0 2000 FT
EXISTING RETENTION DIKE
NORTH CHANNEL
PORT OF MIAMI
DODGE ISLAND
DISPOSAL SITE
EXISTING RETENTION SITE
SEE DETAIL "A" SHEET 3 OF 20
SEE DETAIL "B" SHEET 4 OF 20
SEE DETAIL "C" SHEET 5 OF 20
SEE DETAIL "D" SHEET 6 OF 20
SEE DETAIL "E" SHEET 9 OF 20
BISCAYNE BAY
VIRGINIA KEY
DREDGING, FILLING AND BULKHEADING
N.G.V.D.
CITY OF MIAMI
CITY OF MIAMI BEACH
FISHER ISLAND, INC.
GELCREP OIL CO.
BISCAYNE BAY
PORT OF MIAMI
DADE FLA.
METRO DADE
COUNTY SEAPORT DEPARTMENT

3.

PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS DETAIL "A"



PERMIT: DREDGING, FILLING AND BULKHEADING

DATUM: M.G.V.D.

APPLICANT PROPERTY OWNER:

① CITY OF MIAMI

② CITY OF MIAMI BEACH

FISHER ISLAND, INC.

BELCHER OIL CO.

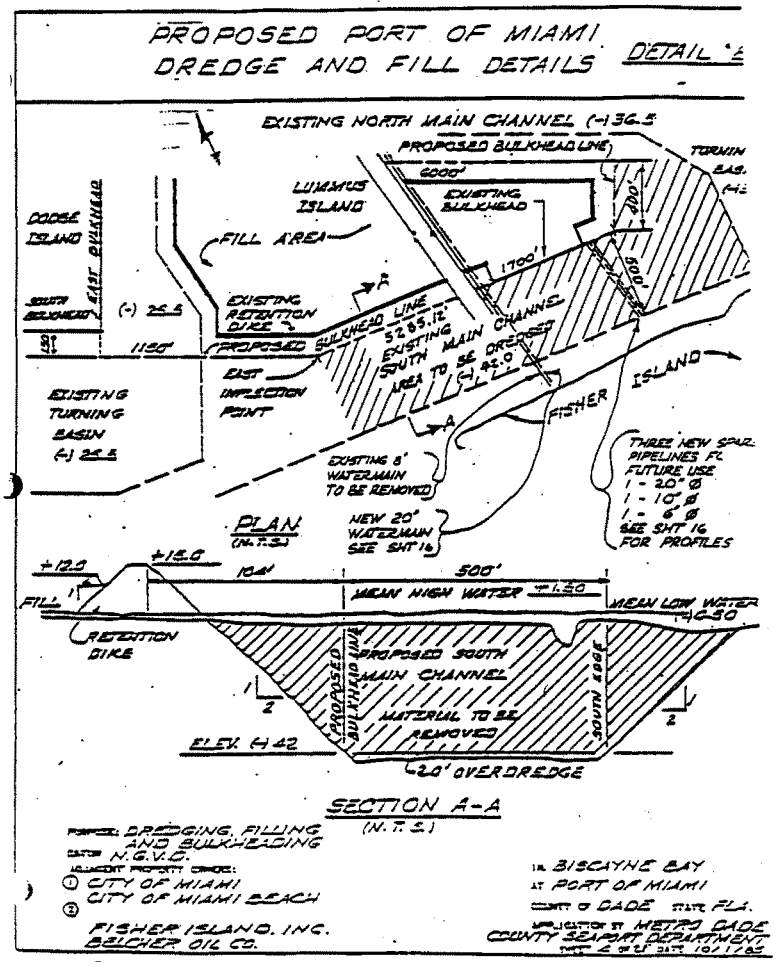
IN BISCAYNE BAY

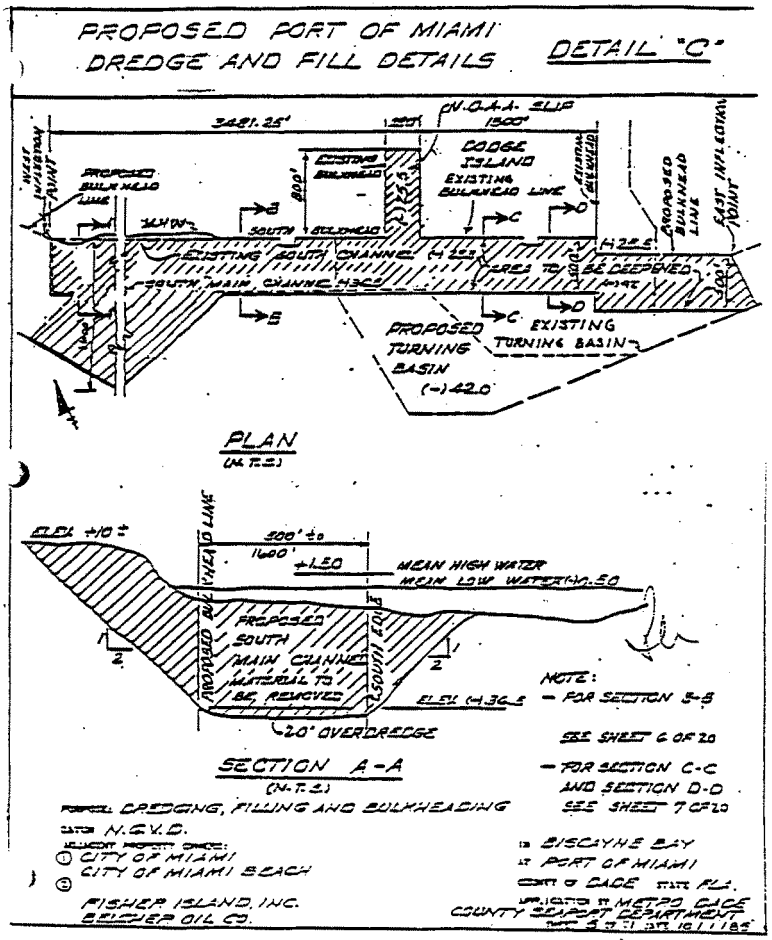
AT PORT OF MIAMI

COUNTY OF DADE STATE FLA.

APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT

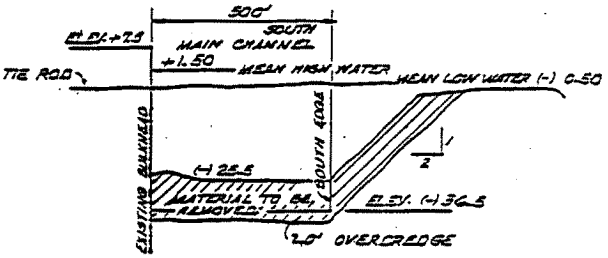
SHEET 3 OF 21 DATE 10/1/69


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL 'E
EXISTING NORTH MAIN CHANNEL (-) 36.5
PROPOSED BULKHEAD LINE
LUMMUS ISLAND
FILL AREA
EXISTING BULKHEAD
2000'
1700'
400'
600'
DODGE ISLAND
EAST BULKHEAD
SOUTH BULKHEAD
(-) 25.5
EXISTING RETENTION DIKE
PROPOSED BULKHEAD LINE
S2 85.12°
EXISTING SOUTH MAIN CHANNEL
AREA TO BE DREDGED (-) 42.0
1150'
EAST INFLECTION POINT
EXISTING TURNING BASIN (-) 25.5
FISHER ISLAND
EXISTING 8" WATERMAIN TO BE REMOVED
THREE NEW SPARE PIPELINES FOR FUTURE USE
1 - 20" Ø
1 - 10" Ø
1 - 6" Ø
SEE SHT 16 FOR PROFILES
PLAN
(N.T.S.)
NEW 20" WATERMAIN SEE SHT 16
+12.0
+15.0
10.4'
500'
MEAN HIGH WATER +1.20
MEAN LOW WATER +0.30
FILL
RETENTION DIKE
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL
MATERIAL TO BE REMOVED
SOUTH EDGE
1
2
1
2
ELEV. (-) 42
20' OVERDREDGE
SECTION A-A
(N.T.S.)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNER:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BEICHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
SHT 2 OF 2 DATE 10/1/65


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "C"
N.O.A.A. SLIP
1500'
3481.25'
CODGE ISLAND
EXISTING BULKHEAD LINE
PROPOSED BULKHEAD LINE
EXISTING BULKHEAD
PROPOSED BULKHEAD LINE
EAST JETTY
WEST JETTY
SOUTH BULKHEAD
EXISTING SOUTH CHANNEL
SOUTH MAIN CHANNEL
AREA TO BE DEEPENED
PROPOSED TURNING BASIN
EXISTING TURNING BASIN
(-)42.0
PLAN
(N.T.S.)
EL. EX. +10 ±
300' ±
1600'
+1.50
MEAN HIGH WATER
MEAN LOW WATER +0.50
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
PROPOSED SOUTH JETTY
EL. EX. (-)36.5
20' OVERDREDGE
SECTION A-A
(N.T.S.)
NOTE:
- FOR SECTION B-B SEE SHEET 6 OF 20
- FOR SECTION C-C AND SECTION D-D SEE SHEET 7 OF 20
DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
SKIPPER OIL CO.
BISCAYNE BAY
PORT OF MIAMI
DADE STATE FLA.
METRO DADE COUNTY SURVEY DEPARTMENT

PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS

DETAIL "C"



SECTION B-B
(N.T.S.)

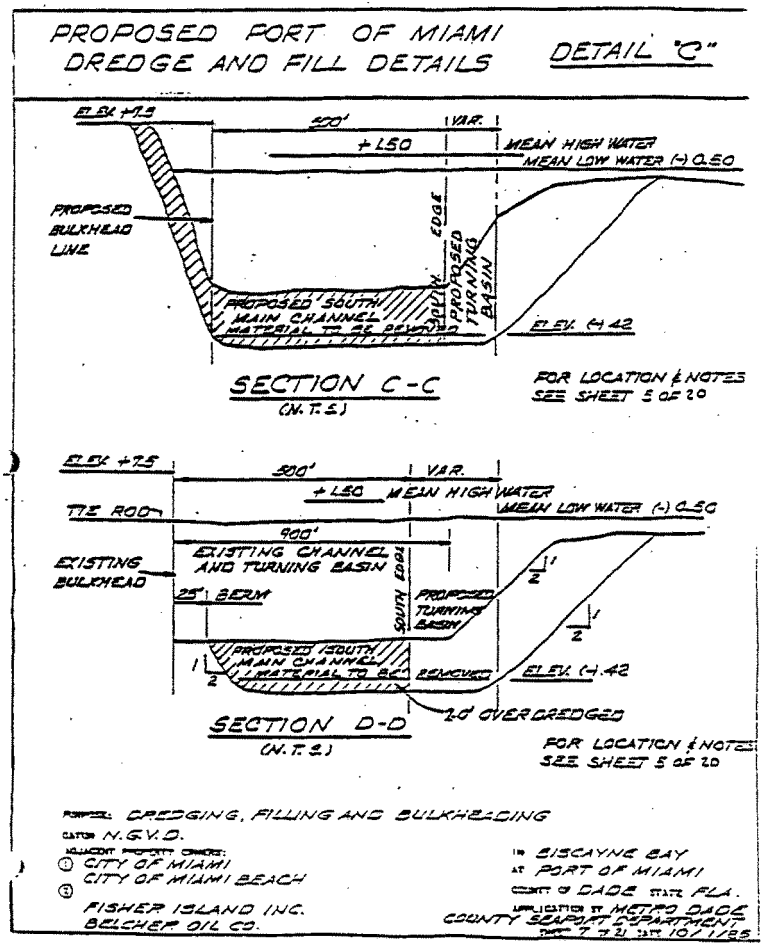
FOR LOCATION & NOTES SEE SHEET 5 of 20

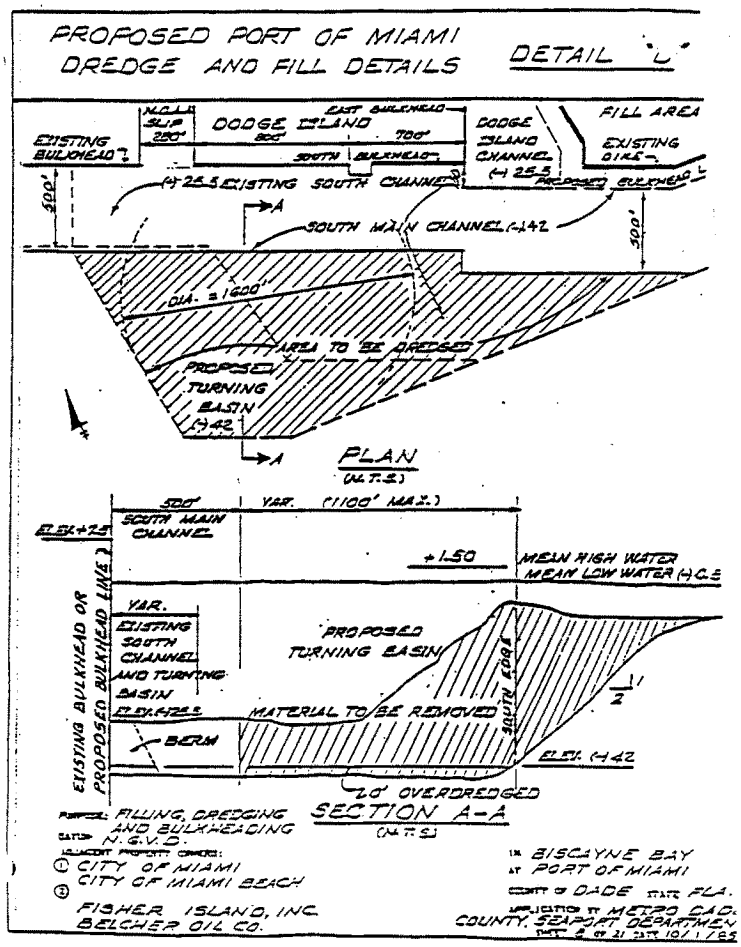
DREDGING, FILLING AND BULKHEADING

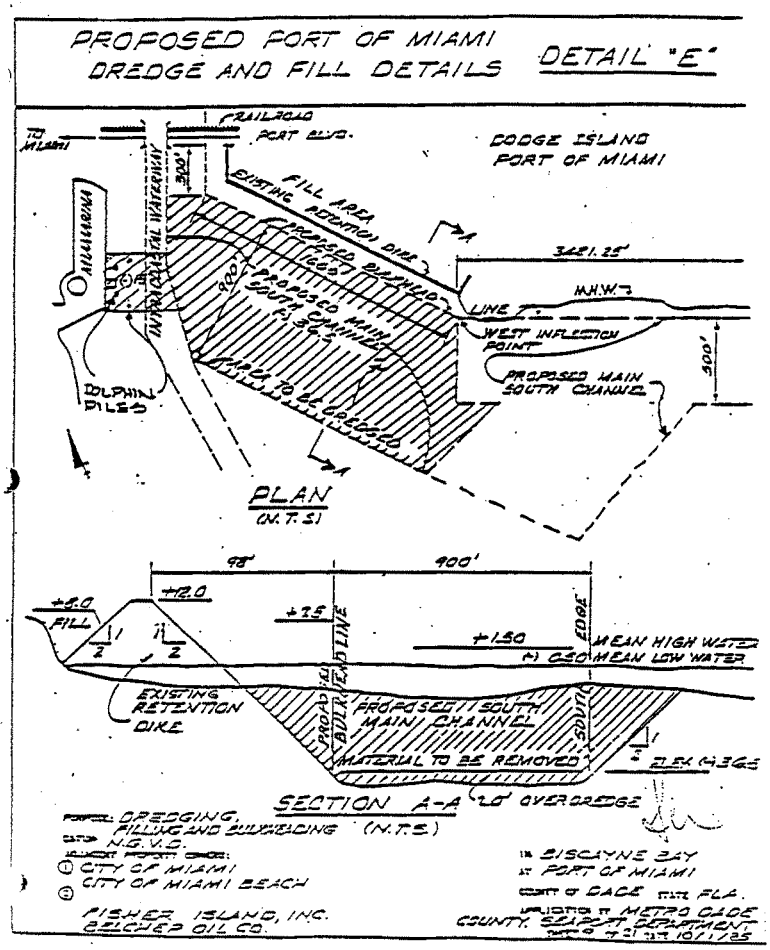
DATUM N.G.V.D.

ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.

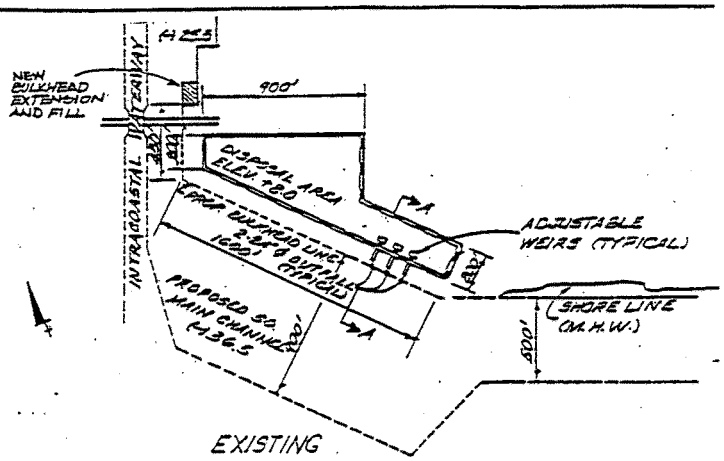
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
SURVEY BY METRO DADE COUNTY SEAPORT DEPARTMENT
SHEET 6 of 21 DATE 10/1/65


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "C"
EL. BM +1.3
200'
VAR.
+1.50
MEAN HIGH WATER
MEAN LOW WATER (-) 0.50
PROPOSED BULKHEAD LINE
SOUTH EDGE PROPOSED TURNING BASIN
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
EL. EV. (-) 42
SECTION C-C
(N. T. S.)
FOR LOCATION & NOTES SEE SHEET 5 OF 20
EL. EV. +7.5
300'
VAR.
+1.50
MEAN HIGH WATER
MEAN LOW WATER (-) 0.50
TIE ROD
900'
EXISTING BULKHEAD
EXISTING CHANNEL AND TURNING BASIN
25' BERM
SOUTH EDGE PROPOSED TURNING BASIN
1/2 : 1
PROPOSED SOUTH MAIN CHANNEL MATERIAL TO BE REMOVED
EL. EV. (-) 42
2d OVER DREDGED
SECTION D-D
(N. T. S.)
FOR LOCATION & NOTES SEE SHEET 5 OF 20
PURPOSE DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
1 CITY OF MIAMI
2 CITY OF MIAMI BEACH
FISHER ISLAND INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT
DWG. 7 of 21 DATE 10/1/85


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "C"
EXISTING BULKHEAD
N.C.L.L. SLIP 250'
DODGE ISLAND
EAST BULKHEAD
700'
SOUTH BULKHEAD
DODGE ISLAND CHANNEL
(-) 25.5
FILL AREA
EXISTING DIKE
PROPOSED BULKHEAD
500'
(-) 25.5 EXISTING SOUTH CHANNEL
SOUTH MAIN CHANNEL (-)42
300'
DIA. = 1600'
AREA TO BE DREDGED
PROPOSED TURNING BASIN (-)42
PLAN
(M.T.L.)
500'
VAR. (1100' MAX.)
ELEV.+7.5
SOUTH MAIN CHANNEL
+1.50
MEAN HIGH WATER
MEAN LOW WATER (-) C.E
EXISTING BULKHEAD OR PROPOSED BULKHEAD LINE
VAR.
EXISTING SOUTH CHANNEL AND TURNING BASIN
ELEV.-42.5
PROPOSED TURNING BASIN
MATERIAL TO BE REMOVED
SOUTH SIDE
1:1
1/2
BERM
ELEV. (-)42
2.0' OVERDREDGED
SECTION A-A
(M.T.L.)
FILLING, DREDGING AND BULKHEADING
N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION OF METRO DADE COUNTY, SEAPORT DEPARTMENT
SHEET 2 OF 21 DATE 10/1/65

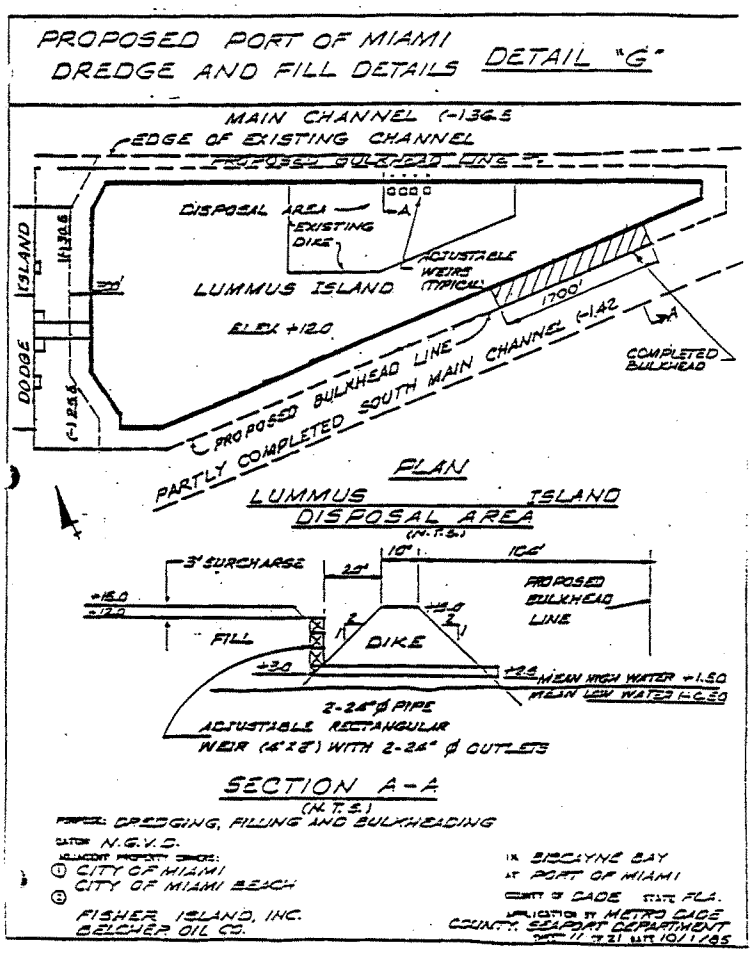

PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "E"
TO MIAMI
RAILROAD
PORT BLVD.
DODGE ISLAND
PORT OF MIAMI
EXISTING FILL AREA
PROPOSED ADDITIONAL DIKE
INTRACOASTAL WATERWAY
300'
3421.25'
M.H.W. LINE
WEST INFLECTION POINT
PROPOSED MAIN SOUTH CHANNEL
400'
DOLPHIN PILES
MATERIAL TO BE DREDGED
PLAN
(N.T.S.)
98'
900'
+12.0
+7.5
+1.50
+2.0
FILL
1:2
1:2
MEAN HIGH WATER
MEAN LOW WATER
EDGE
EXISTING RETENTION DIKE
PROPOSED BULKHEAD LINE
PROPOSED SOUTH MAIN CHANNEL
MATERIAL TO BE REMOVED
1:2
2' CLEARANCE
SECTION A-A
"D" OVERDREDGE
DREDGING, FILLING AND BULKHEADING (N.T.S.)
DATUM N.G.V.D.
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
GETTY OIL CO.
BISCAYNE BAY
PORT OF MIAMI
DADE COUNTY, FLA.
METRO DADE COUNTY, SEAPORT DEPARTMENT

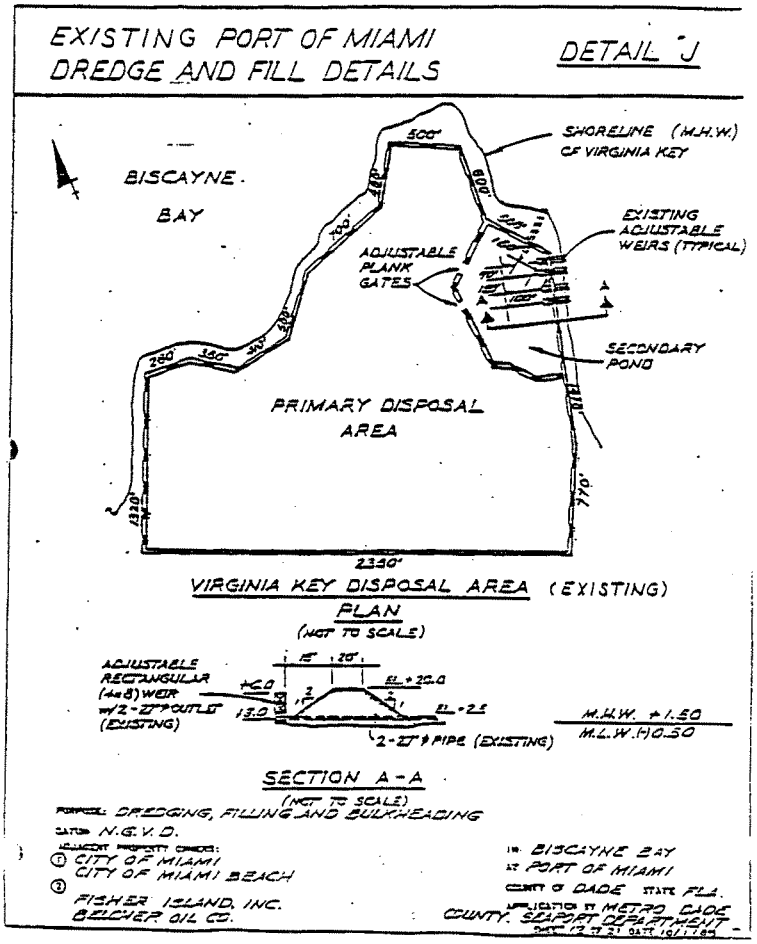
PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS DETAIL "F"

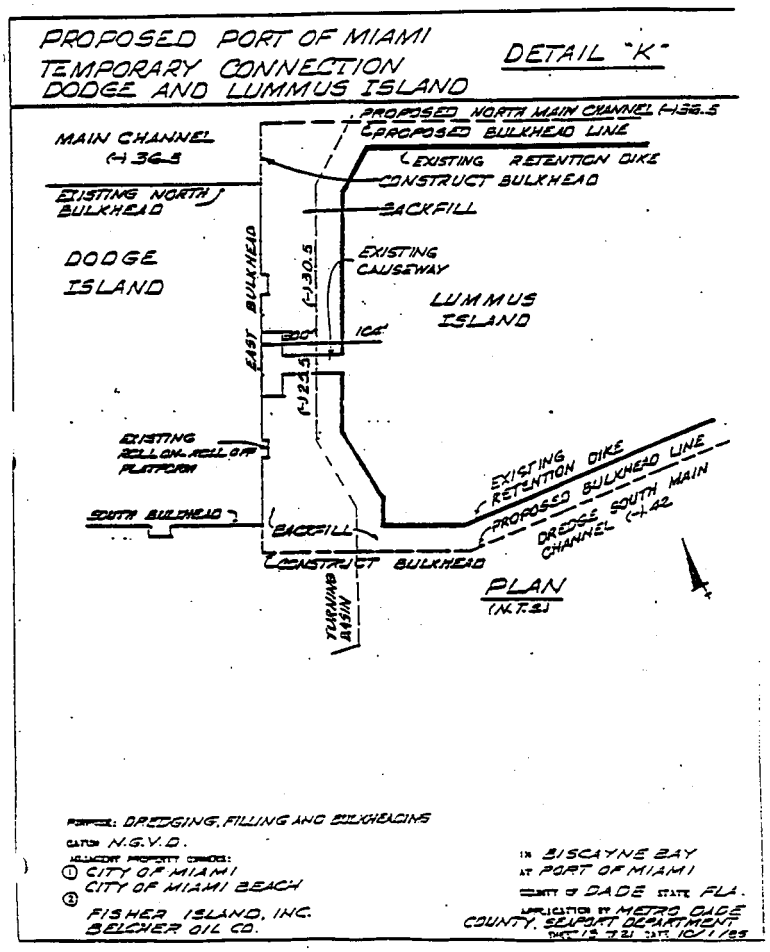


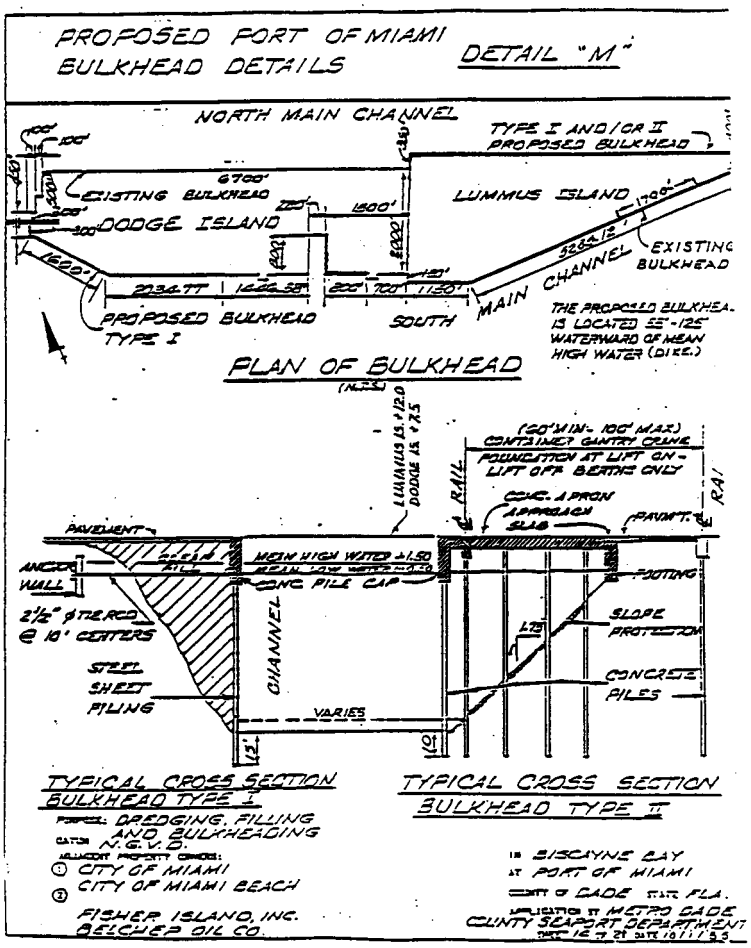
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.

IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY, SEAPORT DEPARTMENT
DWG. 10 of 21 DATE 10/1/85


PROPOSED PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "G"
MAIN CHANNEL (-)36.5
EDGE OF EXISTING CHANNEL
PROPOSED BULKHEAD LINE
DISPOSAL AREA
EXISTING DIKE
ADJUSTABLE WEIRS (TYPICAL)
LUMMUS ISLAND
ELEV +12.0
1700'
320'
(-)42
COMPLETED BULKHEAD
PROPOSED BULKHEAD LINE
PARTLY COMPLETED SOUTH MAIN CHANNEL
DODGE ISLAND
PLAN
LUMMUS ISLAND DISPOSAL AREA
(N.T.S.)
3' SURCHARGE
25'
10'
10'
PROPOSED BULKHEAD LINE
+15.0
+12.0
FILL
DIKE
+3.0
+2.4
MEAN HIGH WATER +1.50
MEAN LOW WATER +0.20
2-24" Ø PIPE
ADJUSTABLE RECTANGULAR WEIR (4'x8') WITH 2-24" Ø OUTLETS
SECTION A-A
(N.T.S.)
PROPOSED: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION OF METRO DADE COUNTY, SEAPORT DEPARTMENT
SHT 11 OF 21 SHTS 10/1/85

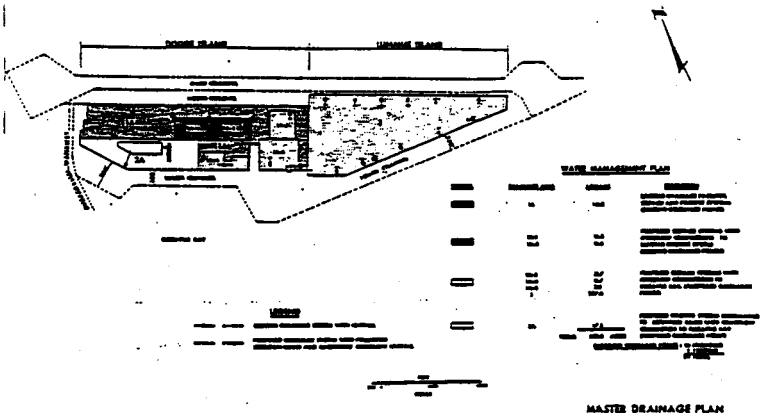

EXISTING PORT OF MIAMI
DREDGE AND FILL DETAILS
DETAIL "J"
BISCAYNE BAY
SHORELINE (M.H.W.) OF VIRGINIA KEY
EXISTING ADJUSTABLE WEIRS (TYPICAL)
ADJUSTABLE PLANK GATES
SECONDARY POND
PRIMARY DISPOSAL AREA
500'
800'
700'
260'
340'
520'
1320'
770'
2330'
VIRGINIA KEY DISPOSAL AREA (EXISTING)
PLAN
(NOT TO SCALE)
ADJUSTABLE RECTANGULAR (4x8) WEIR w/2-27" ø OUTLET (EXISTING)
+6.0
13.0
EL. +20.0
EL. -2.5
2-27" ø PIPE (EXISTING)
M.H.W. +1.50
M.L.W. +0.50
SECTION A-A
(NOT TO SCALE)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
CITY OF MIAMI BEACH
② FISHER ISLAND, INC.
BEICHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY SEAPORT DEPARTMENT


PROPOSED PORT OF MIAMI
TEMPORARY CONNECTION
DODGE AND LUMMUS ISLAND
DETAIL "K"
PROPOSED NORTH MAIN CHANNEL (-)36.5
PROPOSED BULKHEAD LINE
EXISTING RETENTION DIKE
CONSTRUCT BULKHEAD
BACKFILL
MAIN CHANNEL (-)36.5
EXISTING NORTH BULKHEAD
DODGE ISLAND
EAST BULKHEAD
(-)30.5
EXISTING CAUSEWAY
LUMMUS ISLAND
200'
ICW
(-)23.5
EXISTING RELIEF-ACCESS PLATFORM
EXISTING RETENTION DIKE
PROPOSED BULKHEAD LINE
SOUTH BULKHEAD
BACKFILL
DREDGE SOUTH MAIN CHANNEL (-)42
CONSTRUCT BULKHEAD
TURNING BASIN
PLAN
(N.T.S.)
PURPOSE: DREDGING, FILLING AND BULKHEADING
DATUM N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
CITY OF MIAMI BEACH
② FISHER ISLAND, INC.
BELCHER OIL CO.
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY METRO DADE COUNTY, SEAPORT DEPARTMENT
SHEET 2 OF 2 DATE 10/1/85


PROPOSED PORT OF MIAMI
BULKHEAD DETAILS
DETAIL "M"
NORTH MAIN CHANNEL
TYPE I AND/OR II
PROPOSED BULKHEAD
EXISTING BULKHEAD
6700'
1500'
DODGE ISLAND
LUMMUS ISLAND
1700'
EXISTING
BULKHEAD
MAIN CHANNEL
SOUTH
PROPOSED BULKHEAD
TYPE I
THE PROPOSED BULKHEAD IS LOCATED 55'-125' WATERWARD OF MEAN HIGH WATER (DIRE.)
PLAN OF BULKHEAD
LUMMUS EL +12.0
DODGE IS. +7.5
(50' MIN.- 100' MAX.)
CONTAINER GANTRY CRANE
FOUNDATION AT LIFT ON-LIFT OFF BERTHS ONLY
RAIL
CONC. APRON APPROACH SLAB
PAVEMENT
MEAN HIGH WATER +1.50
MEAN LOW WATER +0.20
CONC. PILE CAP
FOOTING
ANCHOR WALL
2½" ø T.E.R.C.D. @ 10' CENTERS
SLOPE PROTECTION
1:2
STEEL SHEET PILING
CHANNEL
VARIES
CONCRETE PILES
12'
10'
TYPICAL CROSS SECTION
BULKHEAD TYPE I
TYPICAL: DREDGING, FILLING AND BULKHEADING
DATUM: N.G.V.D.
RELINQUISHT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
TYPICAL CROSS SECTION
BULKHEAD TYPE II
IN BISCAYNE BAY
AT PORT OF MIAMI
DADE STATE FLA.
METRO DADE
COUNTY SEAPORT DEPARTMENT

PORT OF MIAMI
DRAINAGE DETAILS

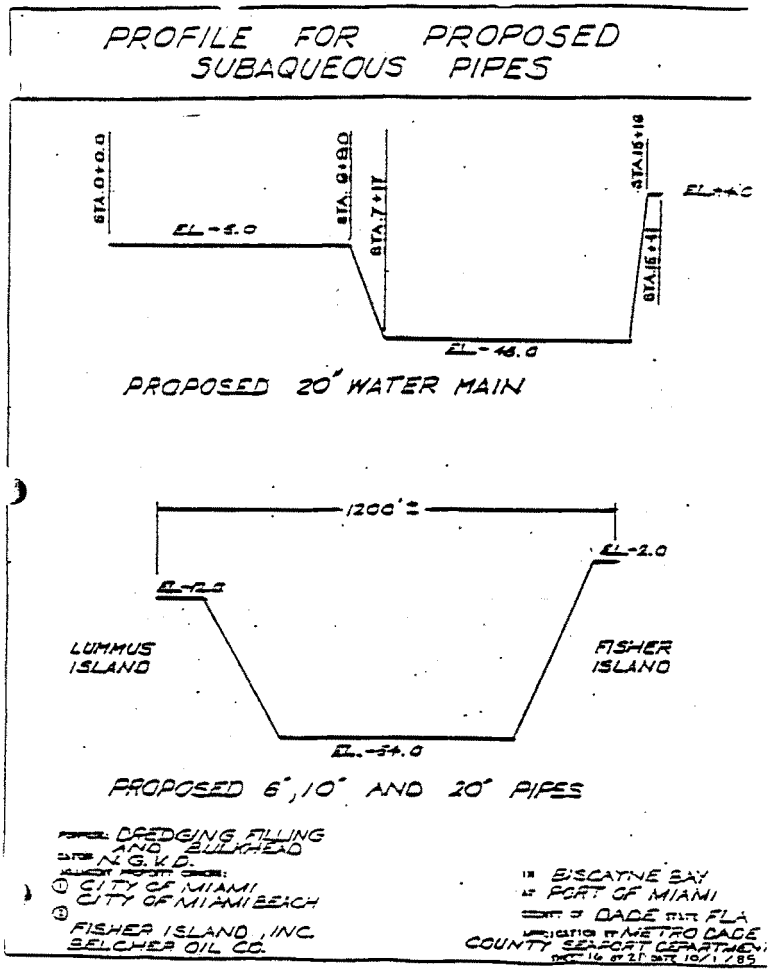
COE # 79-0623
DER #

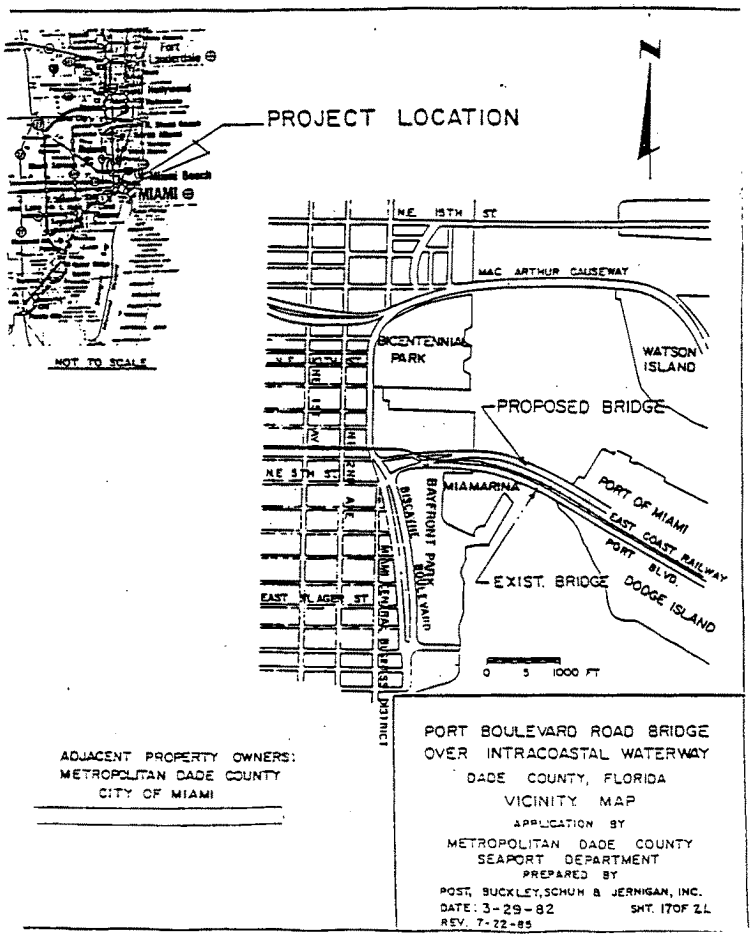


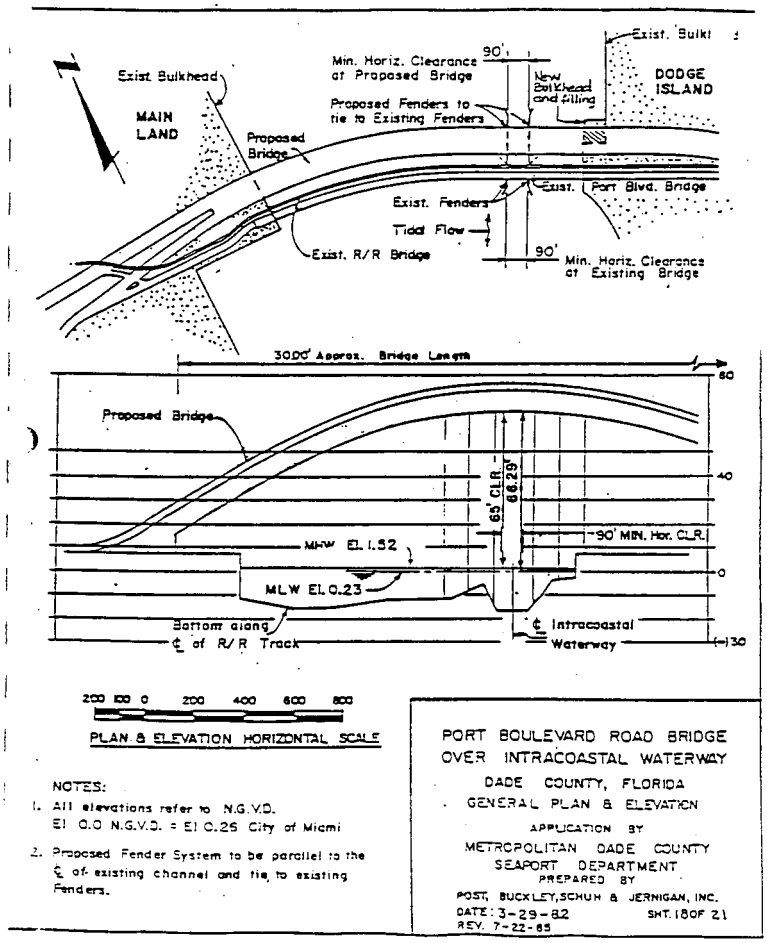
MASTER DRAINAGE PLAN

PURPOSE: DREDGING, FILLING AND BULKHEADING, AND DRAINAGE
DATUM: N.G.V.D.
ADJACENT PROPERTY OWNERS:
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.

IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE STATE FLA.
APPLICATION BY: METRO DADE COUNTY SUPPORT DEPARTMENT


PROFILE FOR PROPOSED SUBAQUEOUS PIPES
STA. 0+0.0
STA. 9+90
STA. 7+17
STA. 15+16
STA. 15+41
EL.+4.0
EL.-4.0
EL.-46.0
PROPOSED 20" WATER MAIN
1200'±
EL.-2.0
EL.-12.0
LUMMUS ISLAND
FISHER ISLAND
EL.-34.0
PROPOSED 6", 10" AND 20" PIPES
DREDGING FILLING AND BULKHEAD
N.G.V.D.
① CITY OF MIAMI
② CITY OF MIAMI BEACH
FISHER ISLAND, INC.
BELCHER OIL CO.
BISCAYNE BAY
PORT OF MIAMI
DADE FLA
METRO DADE COUNTY SEAPORT DEPARTMENT


PROJECT LOCATION
N
Fort Lauderdale
Miami Beach
MIAMI
NOT TO SCALE
N.E. 15TH ST
MAC ARTHUR CAUSEWAY
BICENTENNIAL PARK
WATSON ISLAND
PROPOSED BRIDGE
N.E. 5TH ST
MIAMARINA
PORT OF MIAMI
EAST COAST RAILWAY
PORT BLVD.
EXIST. BRIDGE
DODGE ISLAND
BISCAYNE BAYFRONT PARK BOULEVARD
EAST FLAGLER ST
0 5 1000 FT
ADJACENT PROPERTY OWNERS:
METROPOLITAN DADE COUNTY
CITY OF MIAMI
PORT BOULEVARD ROAD BRIDGE
OVER INTRACOASTAL WATERWAY
DADE COUNTY, FLORIDA
VICINITY MAP
APPLICATION BY
METROPOLITAN DADE COUNTY
SEAPORT DEPARTMENT
PREPARED BY
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
DATE: 3-29-82
SHT. 17OF 24
REV. 7-22-85

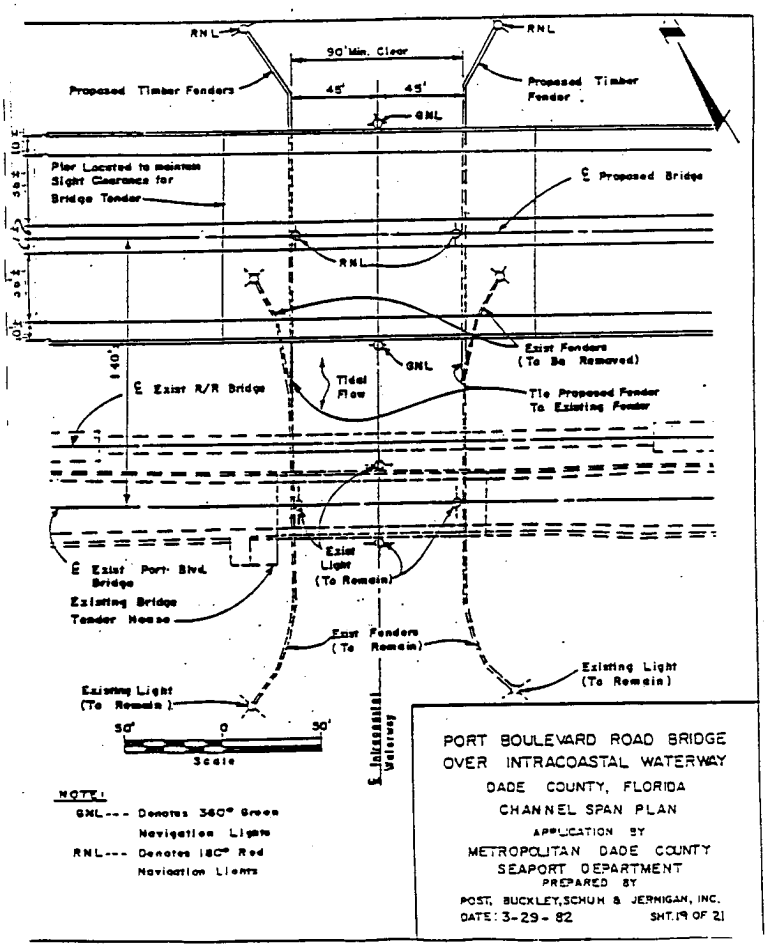


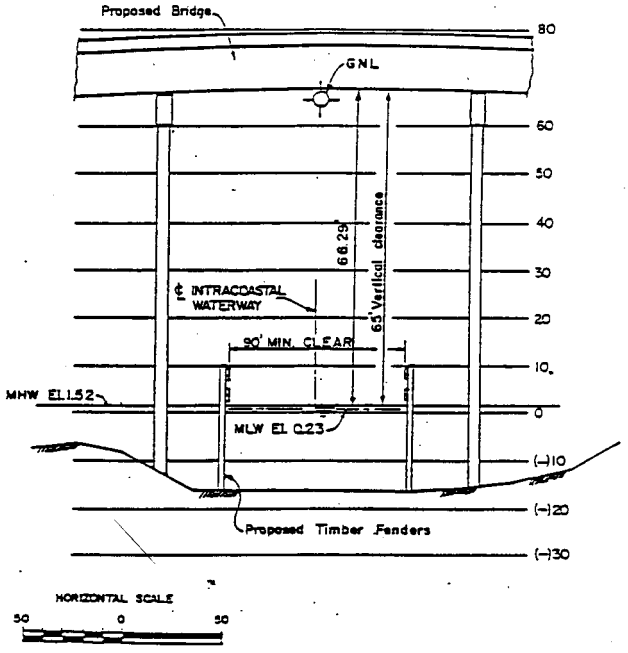
NOTES:

1. All elevations refer to N.G.V.D.
   El 0.0 N.G.V.D. = El 0.25 City of Miami
2. Proposed Fender System to be parallel to the ℄ of existing channel and tie to existing Fenders.

PORT BOULEVARD ROAD BRIDGE
OVER INTRACOASTAL WATERWAY
DADE COUNTY, FLORIDA
GENERAL PLAN & ELEVATION

APPLICATION BY
METROPOLITAN DADE COUNTY
SEAPORT DEPARTMENT
PREPARED BY
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
DATE: 3-29-82 SHT. 1 OF 21
REV. 7-22-83

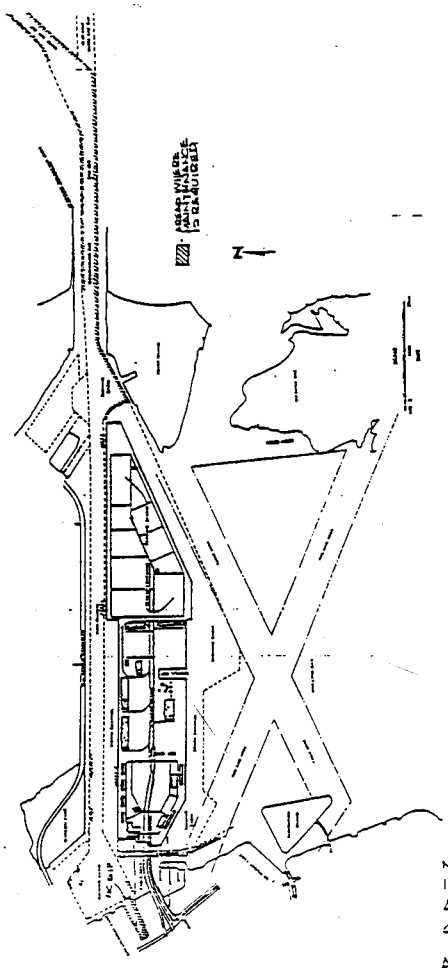

RNL
90' Min. Clear
RNL
Proposed Timber Fenders
45'
45'
Proposed Timber Fender
GNL
Pier Located to maintain Sight Clearance for Bridge Tender
℄ Proposed Bridge
RNL
Exist Fenders (To Be Removed)
GNL
Tidal Flow
℄ Exist R/R Bridge
Tie Proposed Fender To Existing Fender
℄ Exist Port Blvd. Bridge
Existing Bridge Tender House
Exist Light (To Remain)
Exist Fenders (To Remain)
Existing Light (To Remain)
Existing Light (To Remain)
50' 0 50'
Scale
℄ Intracoastal Waterway
NOTE:
GNL--- Denotes 360° Green Navigation Light
RNL--- Denotes 180° Red Navigation Lights
PORT BOULEVARD ROAD BRIDGE
OVER INTRACOASTAL WATERWAY
DADE COUNTY, FLORIDA
CHANNEL SPAN PLAN
APPLICATION BY
METROPOLITAN DADE COUNTY
SEAPORT DEPARTMENT
PREPARED BY
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
DATE: 3-29-82
SHT. 19 OF 21



NOTE:

GNL -- DENOTES 360° GREEN NAVIGATION LIGHTS.

PORT BOULEVARD ROAD BRIDGE
OVER INTRACOASTAL WATERWAY
DADE COUNTY, FLORIDA
CHANNEL SPAN ELEVATION
APPLICATION BY
METROPOLITAN DADE COUNTY
SEAPORT DEPARTMENT
PREPARED BY
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
DATE: 3-29-82 SHT. 20 OF 21



MAINTANCE AREAS
IN BISCAYNE BAY
AT PORT OF MIAMI
COUNTY OF DADE, FL

APPLICATION BY:
METRO-DADE SEAPOR
DEPARTMENT